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1224

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Phe	Leu	Asp	Arg	Asp	Tyr	Cys	Val	Ser	Gln	Gly	Thr	Ser	Tyr	Asn	Tyr	
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His Pro Leu Asn Lys His Leu Phe Lys Pro Ser Thr Phe Met Thr Ser
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His Glu Pro Pro Val Tyr Met Asp Glu Asp Asp Asp Arg Ser Cys Phe
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aaatcatata tatggtaata atttccctct tttgtagtct gcacaagatc cataaaagat	2146
tgtattttta ttactattta aacaagtgat taaatttagt ctgcacagtg agcaagggtt	2206
cacatgcatt cttttatact gctggatttt gttgtgcata atttaaaaca ttttgtatgt	2266
ttcttcttat ctgtgtatac agtatgttct tgaatgatgt tcatttgtca ggagaactgt	2326
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<222> (13) .. (1413)
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tac acg tat cct gaa aac tgg agg gcc ttc aag gct ctc atc gct gct	96															
Tyr Thr Tyr Pro Glu Asn Trp Arg Ala Phe Lys Ala Leu Ile Ala Ala																
	15 20 25															
cag tac agc ggg gct cat gtc cgc gtg ctc tcc gca cca ccc cac ttc	144															
Gln Tyr Ser Gly Ala His Val Arg Val Leu Ser Ala Pro Pro His Phe																
	30 35 40															
cat ttt ggc caa acc aac cgc acc cct gaa ttt ctc cgc aaa ttt cct	192															
His Phe Gly Gln Thr Asn Arg Thr Pro Glu Phe Leu Arg Lys Phe Pro																
	45 50 55 60															
gcc gcc aag gtc cca gca ttt gag ggt gat gat gga ttc tgt gtg ttt	240															
Ala Gly Lys Val Pro Ala Phe Glu Gly Asp Asp Gly Phe Cys Val Phe																
	65 70 75															
gag agc aac gcc att gcc tac tat gtg agc aat gag gag ctg cgg gga	288															
Glu Ser Asn Ala Ile Ala Tyr Tyr Val Ser Asn Glu Glu Leu Arg Gly																
	80 85 90															
agt act cca gag gca gca gcc cag gtg gtg cag tgg gtg agc ttt gct	336															
Ser Thr Pro Glu Ala Ala Ala Gln Val Val Gln Trp Val Ser Phe Ala																
	95 100 105															
gat tcc gat ata gtg ccc cca gcc agt acc tgg gtg ttc ccc acc ttg	384															
Asp Ser Asp Ile Val Pro Pro Ala Ser Thr Trp Val Phe Pro Thr Leu																
	110 115 120															
ggc atc atg cac cac aac aaa cag gcc act gag aat gca aag gag gaa	432															
Gly Ile Met His His Asn Lys Gln Ala Thr Glu Asn Ala Lys Glu Glu																
	125 130 135 140															
gtg agg cga att ctg ggg ctg ctg gat gct tac ttg aag acg agg act	480															
Val Arg Arg Ile Leu Gly Leu Leu Asp Ala Tyr Leu Lys Thr Arg Thr																
	145 150 155															
ttt ctg gtg ggc gaa cga gtg aca ttg gct gac atc aca gtt gtc tgc	528															
Phe Leu Val Gly Glu Arg Val Thr Leu Ala Asp Ile Thr Val Val Cys																
	160 165 170															
acc ctg ttg tgg ctc tat aag cag gtt cta gag cct tct ttc cgc cag	576															
Thr Leu Leu Trp Leu Tyr Lys Gln Val Leu Glu Pro Ser Phe Arg Gln																
	175 180 185															
gcc ttt ccc aat acc aac cgc tgg ttc ctc acc tgc att aac cag ccc	624															
Ala Phe Pro Asn Thr Asn Arg Trp Phe Leu Thr Cys Ile Asn Gln Pro																
	190 195 200															
cag ttc cgg gct gtc ttg ggc gaa gtg aaa ctg tgt gag aag atg gcc	672															

1229

Gly Val Ile Lys Gly Asn *
465

<210> 475
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<212> DNA
<213> Homo sapiens

<220>
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<222> (250) .. (624)

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<222> (1) ... (846)
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taggataata tctaggcatt ttgcgaagtt taaccacccg ggtaccgccg ttcttgtcac 180
caccaactgg ttttgtaaca gttgcgagaa ccttctcctt ctttttcttt ccaacttgga 240
cgctgcaga atg gct ccc gca aag aag ggt ggc gag aag aaa aag ggc 288
Met Ala Pro Ala Lys Lys Gly Gly Glu Lys Lys Lys Gly
1 5 10
cgt tct gcc atc aac gaa gtg gta acc cga gaa tac acc atc aac att 336
Arg Ser Ala Ile Asn Glu Val Val Thr Arg Glu Tyr Thr Ile Asn Ile
15 20 25
cac aag cgc atc cat gga gtg ggc ttc aag aag cgt gca cct cgg gca 384
His Lys Arg Ile His Gly Val Gly Phe Lys Lys Arg Ala Pro Arg Ala
30 35 40 45
ctc aaa gag att cgg aaa ttt gcc atg aag gag atg gga act cca gat 432
Leu Lys Glu Ile Arg Lys Phe Ala Met Lys Glu Met Gly Thr Pro Asp
50 55 60
gtg cgc att gac acc agg ctc aac aaa gct gtc tgg gcc aaa gga ata 480
Val Arg Ile Asp Thr Arg Leu Asn Lys Ala Val Trp Ala Lys Gly Ile
65 70 75
agg aat gtg cca tac cga atc cgt gtg cgg ctg tcc aga aaa cgt aat 528
Arg Asn Val Pro Tyr Arg Ile Arg Val Arg Leu Ser Arg Lys Arg Asn
80 85 90
gag gat gaa gat tca cca aat aag cta tat act ttg gtt acc tat gta 576
Glu Asp Glu Asp Ser Pro Asn Lys Leu Tyr Thr Leu Val Thr Tyr Val
95 100 105
cct gtt acc act ttc aaa aat cta cag aca gtc aat gtg gat gag aac 624
Pro Val Thr Thr Phe Lys Asn Leu Gln Thr Val Asn Val Asp Glu Asn
110 115 120 125
taatcgetga tcgtcagatc aaataaagtt ataaaattgc cttcatgttt ttgttctttt 684

tagttgcaac ataatgtact tgtataccct atcctaatta tgggatcatt tgaagagctt 744
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atg gac ctg aag gga gag ccc ggc ccc cct ggg aag ccc ggg ccc tgg 99
 Met Asp Leu Lys Gly Glu Pro Gly Pro Pro Gly Lys Pro Gly Pro Trp
 10 15 20

ggt ccc cct ggc ccc cct ggc ttc cca gga aaa cca ggc cat gga aag 147
 Gly Pro Pro Gly Pro Pro Gly Phe Pro Gly Lys Pro Gly His Gly Lys
 25 30 35

cca gga ctc cat ggg cag cct ggc cct gct ggg ccc cct ggc ttc tcc 195
 Pro Gly Leu His Gly Gln Pro Gly Pro Ala Gly Pro Pro Gly Phe Ser
 40 45 50 55

cgg atg ggc aag gct ggt ccc cca ggg ctc cct ggc aac gtc ggg cca 243
 Arg Met Gly Lys Ala Gly Pro Pro Gly Leu Pro Gly Asn Val Gly Pro
 60 65 70

cca ggg cag ccg ggg ctt cgg ggg gag cca gga ata cga ggg gac cag 291
 Pro Gly Gln Pro Gly Leu Arg Gly Glu Pro Gly Ile Arg Gly Asp Gln
 75 80 85

ggc ctc cgg gga ccc cca gga ccc cct ggc ctc ccg ggc ccc tca ggc 339
 Gly Leu Arg Gly Pro Pro Gly Pro Pro Gly Leu Pro Gly Pro Ser Gly
 90 95 100

att act atc cct gga aaa cca ggt gcc caa ggg gtg cca ggg ccc cca 387
 Ile Thr Ile Pro Gly Lys Pro Gly Ala Gln Gly Val Pro Gly Pro Pro
 105 110 115

gga ttc cag ggg gaa cca ggg ccc cag ggg gag cct ggg ccc cca ggt 435
 Gly Phe Gln Gly Glu Pro Gly Pro Gln Gly Glu Pro Gly Pro Pro Gly
 120 125 130 135

gat cga ggc ctc aag ggg gat aat gga gtg ggc cag ccc ggg ctg cct 483
 Asp Arg Gly Leu Lys Gly Asp Asn Gly Val Gly Gln Pro Gly Leu Pro
 140 145 150

ggg gcc cca ggg cag ggg ggt gcc ccc ggc ccc ccc ggc ctc cct ggt 531
 Gly Ala Pro Gly Gln Gly Gly Ala Pro Gly Pro Pro Gly Leu Pro Gly
 155 160 165

cca gct ggc tta ggc aaa cct ggt ttg gat ggg ctt cct ggg gcc cca 579

Pro	Ala	Gly	Leu	Gly	Lys	Pro	Gly	Leu	Asp	Gly	Leu	Pro	Gly	Ala	Pro		
		170					175					180					
gga	gac	aag	ggt	gag	tct	ggg	cct	cct	gga	gtt	cca	ggc	ccc	agg	ggg	627	
Gly	Asp	Lys	Gly	Glu	Ser	Gly	Pro	Pro	Gly	Val	Pro	Gly	Pro	Arg	Gly		
		185				190					195						
gag	cca	gga	gct	gtg	ggc	cca	aaa	gga	cct	cct	gga	gta	gac	ggt	gtg	675	
Glu	Pro	Gly	Ala	Val	Gly	Pro	Lys	Gly	Pro	Pro	Gly	Val	Asp	Gly	Val		
		200			205				210						215		
gga	gtc	cca	ggg	gca	gca	ggg	ttg	cca	gga	cca	cag	ggc	cca	tca	ggg	723	
Gly	Val	Pro	Gly	Ala	Ala	Gly	Leu	Pro	Gly	Pro	Gln	Gly	Pro	Ser	Gly		
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gcc	aaa	ggg	gag	cca	gga	acc	cgg	ggc	ccc	cct	ggg	ctg	ata	ggc	ccc	771	
Ala	Lys	Gly	Glu	Pro	Gly	Thr	Arg	Gly	Pro	Pro	Gly	Leu	Ile	Gly	Pro		
			235					240					245				
act	ggc	tat	ggg	atg	cca	gga	ctg	cca	ggc	ccc	aag	ggg	gac	agg	ggc	819	
Thr	Gly	Tyr	Gly	Met	Pro	Gly	Leu	Pro	Gly	Pro	Lys	Gly	Asp	Arg	Gly		
		250					255					260					
cca	gct	ggg	gtc	cca	gga	ctc	ttg	ggg	gac	agg	ggt	gag	cca	ggg	gag	867	
Pro	Ala	Gly	Val	Pro	Gly	Leu	Leu	Gly	Asp	Arg	Gly	Glu	Pro	Gly	Glu		
		265				270					275						
gat	ggg	gag	cca	ggg	gag	cag	ggc	cca	cag	ggt	ctt	ggg	ggt	ccc	cct	915	
Asp	Gly	Glu	Pro	Gly	Glu	Gln	Gly	Pro	Gln	Gly	Leu	Gly	Gly	Pro	Pro		
		280			285				290						295		
ggg	ctt	cct	ggg	tct	gca	ggg	ctt	cct	ggc	aga	cgt	ggg	ccc	cct	ggg	963	
Gly	Leu	Pro	Gly	Ser	Ala	Gly	Leu	Pro	Gly	Arg	Arg	Gly	Pro	Pro	Gly		
				300					305					310			
cct	aag	ggt	gag	gca	ggg	cct	gga	gga	ccc	cca	gga	gtg	cct	ggc	att	1011	
Pro	Lys	Gly	Glu	Ala	Gly	Pro	Gly	Gly	Pro	Pro	Gly	Val	Pro	Gly	Ile		
			315					320					325				
cga	ggt	gac	cag	ggg	cct	agt	ggg	ctg	gct	ggg	aaa	cca	ggg	gtc	cca	1059	
Arg	Gly	Asp	Gln	Gly	Pro	Ser	Gly	Leu	Ala	Gly	Lys	Pro	Gly	Val	Pro		
		330					335					340					
ggt	gag	agg	gga	ctt	cct	ggg	gcc	cat	gga	ccc	cct	gga	cca	act	ggg	1107	
Gly	Glu	Arg	Gly	Leu	Pro	Gly	Ala	His	Gly	Pro	Pro	Gly	Pro	Thr	Gly		
		345				350					355						
ccc	aag	ggt	gag	ccg	ggt	ttc	acg	ggt	cgc	cct	gga	gga	cca	ggg	gtg	1155	
Pro	Lys	Gly	Glu	Pro	Gly	Phe	Thr	Gly	Arg	Pro	Gly	Gly	Pro	Gly	Val		
		360			365				370						375		
gca	gga	gcc	ctg	ggg	cag	aaa	ggt	gac	ttg	ggg	ctc	cct	ggg	cag	cct	1203	
Ala	Gly	Ala	Leu	Gly	Gln	Lys	Gly	Asp	Leu	Gly	Leu	Pro	Gly	Gln	Pro		
				380					385					390			
ggc	ctg	agg	ggt	ccc	tca	gga	atc	cca	gga	ctc	cag	ggt	cca	gct	ggc	1251	
Gly	Leu	Arg	Gly	Pro	Ser	Gly	Ile	Pro	Gly	Leu	Gln	Gly	Pro	Ala	Gly		
			395					400					405				
cct	att	ggc	ccc	caa	ggc	ctg	ccg	ggc	ctg	aag	ggg	gaa	cca	ggc	ctg	1299	
Pro	Ile	Gly	Pro	Gln	Gly	Leu	Pro	Gly	Leu	Lys	Gly	Glu	Pro	Gly	Leu		
		410					415					420					
cca	ggg	ccc	cct	gga	gag	ggg	aga	gca	ggg	gaa	cct	ggc	acg	gct	ggc	1347	

Pro Gly Pro Pro Gly Glu Gly Arg Ala Gly Glu Pro Gly Thr Ala Gly	
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Pro Arg Gly Pro Pro Gly Val Pro Gly Ser Pro Gly Ile Thr Gly Pro	
440 445 450 455	
ccg ggg ctc ccg gga ccc cct ggt gcc cct ggg gcc ttc gat gag act	1443
Pro Gly Leu Pro Gly Pro Pro Gly Ala Pro Gly Ala Phe Asp Glu Thr	
460 465 470	
ggc atc gca ggc ttg cac ctg ccc aac ggc ggt gtg gag ggt gcc gtg	1491
Gly Ile Ala Gly Leu His Leu Pro Asn Gly Gly Val Glu Gly Ala Val	
475 480 485	
ctg ggc aag ggg ggc aag cca cag ttt ggg ctg ggc gag ctg tct gcc	1539
Leu Gly Lys Gly Gly Lys Pro Gln Phe Gly Leu Gly Glu Leu Ser Ala	
490 495 500	
cat gcc aca ccg gcc ttc act gcg gtg ctc acc tcg ccc tta ccc gcc	1587
His Ala Thr Pro Ala Phe Thr Ala Val Leu Thr Ser Pro Leu Pro Ala	
505 510 515	
tcg ggc atg ccc gtg aaa ttt gac cgg act ctc tac aat ggc cac agc	1635
Ser Gly Met Pro Val Lys Phe Asp Arg Thr Leu Tyr Asn Gly His Ser	
520 525 530 535	
ggc tac aac cca gcc act ggc atc ttc acc tgc cct gtg ggc ggc gtc	1683
Gly Tyr Asn Pro Ala Thr Gly Ile Phe Thr Cys Pro Val Gly Gly Val	
540 545 550	
tac tac ttt gct tac cat gtg cac gtc aag ggc acc aac gtg tgg gtg	1731
Tyr Tyr Phe Ala Tyr His Val His Val Lys Gly Thr Asn Val Trp Val	
555 560 565	
gcc ctg tac aag aac aac gtg ccg gcc acc tat acc tac gat gag tac	1779
Ala Leu Tyr Lys Asn Asn Val Pro Ala Thr Tyr Thr Tyr Asp Glu Tyr	
570 575 580	
aag aag ggc tac ctg gac cag gca tct ggt ggg gcc gtg ctc cag ctg	1827
Lys Lys Gly Tyr Leu Asp Gln Ala Ser Gly Gly Ala Val Leu Gln Leu	
585 590 595	
cgg ccc aac gac cag gtc tgg gtg cag atg ccg tcg gac cag gcc aac	1875
Arg Pro Asn Asp Gln Val Trp Val Gln Met Pro Ser Asp Gln Ala Asn	
600 605 610 615	
ggc ctc tac tcc acg gag tac atc cac tcc tcc ttt tca gga ttc ttg	1923
Gly Leu Tyr Ser Thr Glu Tyr Ile His Ser Ser Phe Ser Gly Phe Leu	
620 625 630	
ctc tgc ccc aca taa cccgcggggg gtgtcctgct gccctggcct cctccccttt	1978
Leu Cys Pro Thr *	
635	
agtggtagag cgaccttttc aattacaaag aacctcctgg aaaaaaaaaac aaaagctgaa	2038
cagaggcggc cgtggccttg gcccgaggag actaacttgc tttctccctg catgcaggct	2098
gagattgttt ctggaagggg ctggcctgag tttctttccc ccaaagtgtc gtgcagtgtc	2158
agggctgcac cccataggcc ctgaggcaca cagcccagcc ccttgtgagt cctggcctct	2218
gctgggccct gaaggagctg agaggagct caactcccca ccccgccacg tggggagacc	2278

gcccttcccc c

2289

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 <213> Homo sapiens

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 <222> (353)..(1075)

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 ggaggaggga gggcggcccc cgacccttaa ccagagcgag gttgttgctt tgtgtccaca 180
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 agtcagatgg gcagggcctg agagcctccc tcctctccct aggtccctaa tc atg 355
 Met
 1
 gac tcc cca aga gct ggc acc cac cag ggc ccc ctc gat gca gag aca 403
 Asp Ser Pro Arg Ala Gly Thr His Gln Gly Pro Leu Asp Ala Glu Thr
 5 10 15
 gag gtc ggt gct gac cgc tgc acg tcg act gcc tac cag gag cag agg 451
 Glu Val Gly Ala Asp Arg Cys Thr Ser Thr Ala Tyr Gln Glu Gln Arg
 20 25 30
 ccc cag gtg gag caa gtt ggc aaa cag gct cct ctc tcc cca ggg ctg 499
 Pro Gln Val Glu Gln Val Gly Lys Gln Ala Pro Leu Ser Pro Gly Leu
 35 40 45
 ccg gca atg ggg ggg cct ggc ccc ggc ccc tgt gag gac ccc gcg ggt 547
 Pro Ala Met Gly Gly Pro Gly Pro Gly Pro Cys Glu Asp Pro Ala Gly
 50 55 60 65
 gct ggg gga gca ggt gca ggg ggc tcc gag ccc ctg gtg act gtc acc 595
 Ala Gly Gly Ala Gly Ala Gly Gly Ser Glu Pro Leu Val Thr Val Thr
 70 75 80
 gtg cag tgc gcc ttc aca gtg gcc ctg agg gca cga aga gga gcc gac 643
 Val Gln Cys Ala Phe Thr Val Ala Leu Arg Ala Arg Arg Gly Ala Asp
 85 90 95
 ctg tcc agc ctg cgg gca ctg ctg ggc caa gcc ctc cct cac cag gcc 691
 Leu Ser Ser Leu Arg Ala Leu Leu Gly Gln Ala Leu Pro His Gln Ala
 100 105 110
 cag ctt ggg caa ctc agt tac cta gcc cca ggt gag gac ggg cac tgg 739
 Gln Leu Gly Gln Leu Ser Tyr Leu Ala Pro Gly Glu Asp Gly His Trp
 115 120 125
 gtc ccc atc ccc gag gag gag tcg ctg cag agg gcc tgg cag gac gca 787
 Val Pro Ile Pro Glu Glu Glu Ser Leu Gln Arg Ala Trp Gln Asp Ala

130	135	140	145	
gct gcc tgc ccc agg ggg ctg cag ctg cag tgc agg gga gcc ggg ggt				835
Ala Ala Cys Pro Arg Gly Leu Gln Leu Gln Cys Arg Gly Ala Gly Gly				
	150	155	160	
cgg ccg gtc ctc tac cag gtg gtg gcc cag cac agc tac tcc gcc cag				883
Arg Pro Val Leu Tyr Gln Val Val Ala Gln His Ser Tyr Ser Ala Gln				
	165	170	175	
ggg cca gag gac ctg ggc ttc cga cag ggg gac acg gtg gac gtc ctg				931
Gly Pro Glu Asp Leu Gly Phe Arg Gln Gly Asp Thr Val Asp Val Leu				
	180	185	190	
tgt gaa gtg gac cag gca tgg ctg gag ggc cac tgt gac ggc cgc atc				979
Cys Glu Val Asp Gln Ala Trp Leu Glu Gly His Cys Asp Gly Arg Ile				
	195	200	205	
ggc atc ttc ccc aag tgc ttc gtg gtc ccc gcc ggc cct cgg atg tca				1027
Gly Ile Phe Pro Lys Cys Phe Val Val Pro Ala Gly Pro Arg Met Ser				
	210	215	220	225
gga gcc ccc ggc cgc ctg ccc cga tcc cag cag gga gat cag ccc taa				1075
Gly Ala Pro Gly Arg Leu Pro Arg Ser Gln Gln Gly Asp Gln Pro *				
	230	235	240	
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gcggatgcac acaaatgaaa ccctcacttc aacctgaaga cattcgcaca tgagttacgt	180
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aatttcagga tctttgtcac tgacagcagc actaagactt gttaacttta tatagttaag	300
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caggcagact gcttgagccc aggagttcca gaccagcctg ggcaacatgg caacacccca	420
tctctacaaa aaaatacaag aatcagctgg gcgtggtgat gtgttcctgt aatctcagct	480
actcgggagg cagaggcagg aggattgctt gaacccggga ggcagagggt gtagttagcc	540
gagatctcgc cactgcactc cagtctggac gacagagtga gactcagtct caaataaata	600
aataaatata taaatataag gaaaaaata aagctgcttt ctctcttcc tctcttttg	660
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Met Trp Val Leu Thr Pro Ala
1 5

gct ttt gct ggg aag ctc ttg agt gtg ttc agg caa cct ctg agc tct Ala Phe Ala Gly Lys Leu Leu Ser Val Phe Arg Gln Pro Leu Ser Ser 10 15 20	762
ctg tgg agg agc ctg gtc ccg ctg ttc tgc tgg ctg agg gca acc ttc Leu Trp Arg Ser Leu Val Pro Leu Phe Cys Trp Leu Arg Ala Thr Phe 25 30 35	810
tgg ctg cta gct acc aag agg aga aag cag cag ctg gtc ctg aga ggg Trp Leu Leu Ala Thr Lys Arg Arg Lys Gln Gln Leu Val Leu Arg Gly 40 45 50 55	858
cca gat gag acc aaa gag gag gaa gag gac cct cct ctg ccc acc acc Pro Asp Glu Thr Lys Glu Glu Glu Glu Asp Pro Pro Leu Pro Thr Thr 60 65 70	906
cca acc agc gtc aac tat cac ttc act cgc cag tgc aac tac aaa tgc Pro Thr Ser Val Asn Tyr His Phe Thr Arg Gln Cys Asn Tyr Lys Cys 75 80 85	954
ggc ttc tgt ttc cac aca gcc aaa aca tcc ttt gtg ctg ccc ctt gag Gly Phe Cys Phe His Thr Ala Lys Thr Ser Phe Val Leu Pro Leu Glu 90 95 100	1002
gaa gca aag aga gga ttg ctt ttg ctt aag gaa gct ggt atg gag aag Glu Ala Lys Arg Gly Leu Leu Leu Lys Glu Ala Gly Met Glu Lys 105 110 115	1050
atc aac ttt tca ggt gga gag cca ttt ctt caa gac cgg gga gaa tac Ile Asn Phe Ser Gly Gly Glu Pro Phe Leu Gln Asp Arg Gly Glu Tyr 120 125 130 135	1098
ctg ggc aag ttg gtg agg ttc tgc aaa gta gag ttg cgg ctg ccc agc Leu Gly Lys Leu Val Arg Phe Cys Lys Val Glu Leu Arg Leu Pro Ser 140 145 150	1146
gtg acg atc gtg agc aat gga agc ctg atc cgg gag agg tgg ttc cag Val Thr Ile Val Ser Asn Gly Ser Leu Ile Arg Glu Arg Trp Phe Gln 155 160 165	1194
aat tat ggt gag tat ttg gac att ctc gct atc tcc tgt gac agc ttt Asn Tyr Gly Glu Tyr Leu Asp Ile Leu Ala Ile Ser Cys Asp Ser Phe 170 175 180	1242
gac gag gaa gtc aat gtc ctt att ggc cgt ggc caa gga aag aag aac Asp Glu Glu Val Asn Val Leu Ile Gly Arg Gly Gln Gly Lys Lys Asn 185 190 195	1290
cat gtg gaa aac ctt caa aag ctg agg agg tgg tgt agg gat tat aga His Val Glu Asn Leu Gln Lys Leu Arg Arg Trp Cys Arg Asp Tyr Arg 200 205 210 215	1338
gtc gct ttc aag ata aat tct gtc att aat cgt ttc aac gtg gaa gag Val Ala Phe Lys Ile Asn Ser Val Ile Asn Arg Phe Asn Val Glu Glu 220 225 230	1386
gac atg acg gaa cag atc aaa gca cta aac cct gtc cgc tgg aaa gtg Asp Met Thr Glu Gln Ile Lys Ala Leu Asn Pro Val Arg Trp Lys Val 235 240 245	1434
ttc cag tgc ctc tta att gag ggt gag aat tgt gga gaa gat gct cta	1482

Phe	Gln	Cys	Leu	Leu	Ile	Glu	Gly	Glu	Asn	Cys	Gly	Glu	Asp	Ala	Leu	
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 Ile Lys Ser Thr Phe Val Asp Gly Leu Leu Ala Cys Met Lys Lys Gly
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 tcc att tcc tct aca tgg aat cag act gga act gtg act gga aga ctt 780
 Ser Ile Ser Ser Thr Trp Asn Gln Thr Gly Thr Val Thr Gly Arg Leu
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att act aca cct aag aat ttt aaa ggt aaa gaa gac aag att ctc acg Ile Thr Thr Pro Lys Asn Phe Lys Gly Lys Glu Asp Lys Ile Leu Thr 255 260 265 270	876
atc tcc ccg agg gcc atg ttt gtt tca tcc aaa ggc cac acc ttt cta Ile Ser Pro Arg Ala Met Phe Val Ser Ser Lys Gly His Thr Phe Leu 275 280 285	924
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gga gat ccg gaa ctt ctg aag tta ttc cag gaa tct gaa aga gat gat Gly Asp Pro Glu Leu Leu Lys Leu Phe Gln Glu Ser Glu Arg Asp Asp 305 310 315	1020
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aaa atc aag gac ttc gcc cga gca gct att gcc cag tgt cac cag aca Lys Ile Lys Asp Phe Ala Arg Ala Ala Ile Ala Gln Cys His Gln Thr 385 390 395	1260
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atc cat gtc ttc act gca gtg gct gct tcc cac acc ttg acg gcc agg Ile His Val Phe Thr Ala Val Ala Ala Ser His Thr Leu Thr Ala Arg 450 455 460	1452
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 Glu Gln Val Pro Leu Lys Val Ser Leu Ser Ala Gly Arg Ser Trp Gly
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 His Leu Val Pro Leu Gln Glu Ala Trp Gly Pro Pro Pro Gly Pro Cys
 515 520 525

 cgc act gag tct ccc agc aac agc ctg gct gcc cct ggg tcc cct gcc 1692
 Arg Thr Glu Ser Pro Ser Asn Ser Leu Ala Ala Pro Gly Ser Pro Ala
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 agc acc cag ccc cca ccc ctg cat ttt tgg cct tca ttt tgt ctg tag 1740
 Ser Thr Gln Pro Pro Pro Leu His Phe Ser Pro Ser Phe Cys Leu *
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 Met Lys Gly Lys Lys Gly Ile Val Ala Ala Ser Gly Ser Glu
 1 5 10

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 Thr Glu Asp Glu Asp Ser Met Asp Ile Pro Leu Asp Leu Ser Ser Ser
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 Ala Gly Ser Gly Lys Arg Arg Arg Arg Gly Asn Leu Pro Lys Glu Ser
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Pro Asp Met Leu Arg Lys Asp Gly Lys Asp Pro Asn Gln Phe Thr Ile	
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Ser Arg Arg Gly Ala Lys Ile Ser Glu Thr Ser Ser Val Glu Ser Val	
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Ser Cys Thr Ala Gly Pro Asn Pro Thr Leu Gly Arg Pro Leu Ser Pro	
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Lys Pro Ser Ser Pro Gly Ser Val Leu Ala Arg Pro Ser Val Ile Cys	
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His Thr Thr Val Thr Ala Leu Lys Asp Val Pro Phe Ser Leu Cys Gln	
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Ser Val Gly Val Gly Gln Asn Thr Asp Ile Gln Gln Ile Ala Ala Lys	
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Asn Phe Thr Asp Thr Ser Leu Met Tyr Pro Glu Asp Thr Cys Lys Ser	
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Gly Pro Ser Thr Asn Thr Gln Ser Gly Leu Phe Asn Thr Pro Pro Pro	
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Thr Pro Pro Asp Leu Asn Gln Asp Phe Ser Gly Phe Gln Leu Leu Val	
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Asp Val Ala Leu Lys Arg Ala Ala Glu Met Glu Leu Gln Ala Lys Leu	
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Thr Ala *	
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 Met Met Pro Met Ile Leu Thr Val Phe Leu Ser Asn Asn Glu Gln Ile
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 20 25 30
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 Glu Phe Cys Lys Glu Pro Gly Glu Gly Ser Cys His Leu Ala Glu Val
 35 40 45
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 Trp Arg Gly Asn Glu Arg Pro Ile Pro Phe Asp His Met Met Tyr Glu
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 His Leu Gln Lys Trp Gly Pro Arg Arg Glu Glu Val Lys Phe Phe Leu
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 Arg His Glu Asp Ser Pro Thr Glu Asn Ser Glu Gln Gly Gly Arg Gln
 85 90 95
 acc caa gag caa cga act cag aga aat gta ata aat gta cct gga gaa 576
 Thr Gln Glu Gln Arg Thr Gln Arg Asn Val Ile Asn Val Pro Gly Glu
 100 105 110
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 Lys Arg Thr Glu Asn Gly Val Gly Asn Pro Arg Val Glu Leu Thr Leu
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 Ser Glu Leu Gln Asp Met Ala Ala Arg Gln Gln Gln Gln Ile Glu Asn
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Gln	Lys	Leu	Lys	Glu	Arg	Val	Glu	Ala	Gln	Glu	Asn	Lys	Leu	Lys	Lys		
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Ile	Arg	Ala	Met	Arg	Gly	Gln	Val	Asp	Tyr	Ser	Lys	Ile	Met	Asn	Gly		
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Asn	Leu	Ser	Ala	Glu	Ile	Glu	Arg	Phe	Ser	Ala	Met	Phe	Gln	Glu	Lys		
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Gln	Asp	Gly	Pro	Ala	Ala	Pro	Ala	Asp	Gly	Ser	Thr	Val	Glu	Ser	Leu		
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Pro	Arg	Pro	Leu	Ser	Pro	Thr	Lys	Leu	Thr	Pro	Ile	Val	His	Ser	Pro	
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Asn	Thr	Leu	Ala	Gly	Gly	Met	Glu	Gly	Thr	Pro	Phe	Tyr	Gln	Pro	Ser	
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Pro	Ser	Gln	Asp	Phe	Met	Gly	Thr	Leu	Ala	Asp	Val	Asp	Asn	Gly	Asn	
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Thr	Asn	Ala	Asn	Gly	Asn	Leu	Glu	Glu	Leu	Pro	Pro	Ala	Gln	Pro	Thr	
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gcc	cca	ctc	ccc	gct	gag	cct	gcc	ccg	tca	tca	gat	gcc	aat	gat	aat	2640
Ala	Pro	Leu	Pro	Ala	Glu	Pro	Ala	Pro	Ser	Ser	Asp	Ala	Asn	Asp	Asn	
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Ser	Glu	Arg	Thr	Gly	His	Gly	Leu	Arg	Val	Arg	Phe	Asn	Pro	Leu	Ala	
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Ile	Ile	Tyr	Glu	Val	Glu	Asp	Pro	Ser	Lys	Pro	Asn	Asp	Glu	Gly	Ile	
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Arg	Glu	Gly	Tyr	Val	Pro	Lys	Asn	Leu	Leu	Gly	Leu	Tyr	Pro	Arg	Ile	
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Lys	Pro	Arg	Gln	Arg	Thr	Leu	Ala	*								
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Met His Val
1
gat atg gat tgc ttc ttt gta tca gtg ggt ata cga aat aga cca gat 163
Asp Met Asp Cys Phe Phe Val Ser Val Gly Ile Arg Asn Arg Pro Asp
5 10 15
ctc aaa gga aaa cca gtg gct gtt aca agt aac aga ggc aca gga agg 211
Leu Lys Gly Lys Pro Val Ala Val Thr Ser Asn Arg Gly Thr Gly Arg
20 25 30 35
gca cct tta cgt cct ggc gct aac ccc cag ctg gag tgg cag tat tac 259
Ala Pro Leu Arg Pro Gly Ala Asn Pro Gln Leu Glu Trp Gln Tyr Tyr
40 45 50
cag aat aaa atc ctg aaa ggc aaa gca gat ata cca gat tca tca ttg 307
Gln Asn Lys Ile Leu Lys Gly Lys Ala Asp Ile Pro Asp Ser Ser Leu
55 60 65
tgg gag aat cca gat tct gcg caa gca aat gga att gat tct gtt ttg 355
Trp Glu Asn Pro Asp Ser Ala Gln Ala Asn Gly Ile Asp Ser Val Leu

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ctt caa gct gtt cca tac gat ttt cat gca tat aag gaa gtc gca caa Leu Gln Ala Val Pro Tyr Asp Phe His Ala Tyr Lys Glu Val Ala Gln 120 125 130			499
aca ttg tat gaa aca ttg gca agc tac act cat aac att gaa gct gtc Thr Leu Tyr Glu Thr Leu Ala Ser Tyr Thr His Asn Ile Glu Ala Val 135 140 145			547
agt tgt gat gaa gcg ctg gta gac att acc gaa atc ctt gca gag acc Ser Cys Asp Glu Ala Leu Val Asp Ile Thr Glu Ile Leu Ala Glu Thr 150 155 160			595
aaa ctt act cct gat gaa ttt gca aat gct gtt cgt atg gaa atc aaa Lys Leu Thr Pro Asp Glu Phe Ala Asn Ala Val Arg Met Glu Ile Lys 165 170 175			643
gac cag acg aaa tgt gct gcc tct gtt gga att ggt tct aat att ctc Asp Gln Thr Lys Cys Ala Ala Ser Val Gly Ile Gly Ser Asn Ile Leu 180 185 190 195			691
ctg gct aga atg gca act aga aaa gca aaa cca gat ggg cag tac cac Leu Ala Arg Met Ala Thr Arg Lys Ala Lys Pro Asp Gly Gln Tyr His 200 205 210			739
cta aaa cca gaa gaa gta gat gat ttt atc aga ggc cag cta gtg acc Leu Lys Pro Glu Glu Val Asp Asp Phe Ile Arg Gly Gln Leu Val Thr 215 220 225			787
aat cta cca gga gtt gga cat tca atg gaa tct aag ttg gca tct ttg Asn Leu Pro Gly Val Gly His Ser Met Glu Ser Lys Leu Ala Ser Leu 230 235 240			835
gga att aaa act tgt gga gac ttg cag tat atg acc atg gca aaa ctc Gly Ile Lys Thr Cys Gly Asp Leu Gln Tyr Met Thr Met Ala Lys Leu 245 250 255			883
caa aaa gaa ttt ggt ccc aaa aca ggt cag atg ctt tat agg ttc tgc Gln Lys Glu Phe Gly Pro Lys Thr Gly Gln Met Leu Tyr Arg Phe Cys 260 265 270 275			931
cgt ggc ttg gat gat aga cca gtt cga act gaa aag gaa aga aaa tct Arg Gly Leu Asp Asp Arg Pro Val Arg Thr Glu Lys Glu Arg Lys Ser 280 285 290			979
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325	330	335	
cga aag cct ggg gct cct gta gaa act gca aaa ttt gga ggc cat gga			1171
Arg Lys Pro Gly Ala Pro Val Glu Thr Ala Lys Phe Gly Gly His Gly			
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Ile Cys Asp Asn Ile Ala Arg Thr Val Thr Leu Asp Gln Ala Thr Asp			
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aat gca aaa ata att gga aag gcg atg cta aac atg ttt cat aca atg			1267
Asn Ala Lys Ile Ile Gly Lys Ala Met Leu Asn Met Phe His Thr Met			
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aaa cta aat ata tca gat atg aga ggg gtt ggg att cac gtg aat cag			1315
Lys Leu Asn Ile Ser Asp Met Arg Gly Val Gly Ile His Val Asn Gln			
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Leu Val Pro Thr Asn Leu Asn Pro Ser Thr Cys Pro Ser Arg Pro Ser			
	405	410	415
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Val Gln Ser Ser His Phe Pro Ser Gly Ser Tyr Ser Val Arg Asp Val			
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Phe Gln Val Gln Lys Ala Lys Lys Ser Thr Glu Glu Glu His Lys Glu			
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Val Phe Arg Ala Ala Val Asp Leu Glu Ile Ser Ser Ala Ser Arg Thr			
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tgc act ttc ttg cca cct ttt cct gca cat ctg ccg acc agt cct gat			1555
Cys Thr Phe Leu Pro Pro Phe Pro Ala His Leu Pro Thr Ser Pro Asp			
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Val Ser Val Gln Ser Arg Leu Asn Leu Ser Ile Glu Val Pro Ser Pro			
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tcc cag ctg gat cag tct gtt tta gaa gca ctt cca cct gat ctg cgg			1699
Ser Gln Leu Asp Gln Ser Val Leu Glu Ala Leu Pro Pro Asp Leu Arg			
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gaa caa gta gag caa gtc tgt gct gtc cag caa gca gag tca cat ggc			1747
Glu Gln Val Glu Gln Val Cys Ala Val Gln Gln Ala Glu Ser His Gly			
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Asp Lys Lys Lys Glu Pro Val Asn Gly Cys Asn Thr Gly Ile Leu Pro			
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Gln Pro Val Gly Thr Val Leu Leu Gln Ile Pro Glu Pro Gln Glu Ser			
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Asn Ser Asp Ala Gly Ile Asn Leu Ile Ala Leu Pro Ala Phe Ser Gln			

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Glu	Val	Ala	Glu	Asn	Ser	His	His	Leu	Lys	Ile	Phe	Leu	Pro	Lys	Lys									
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Leu	Leu	Glu	Cys	Leu	Pro	Arg	Cys	Pro	Leu	Leu	Pro	Pro	Glu	Arg	Leu									
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His	Met	Lys	Leu	Lys	Val	Gln	Gly	Met	Glu	Cys	Leu	Tyr	Gly	Cys	Tyr									
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 Pro Ile Ala Phe Asp Gly Ser Arg Met Ser Lys Glu Glu Asp Ser Ile
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 atc aga aac tcc act tac tgt atg aaa gta tcc atc tca ctg aca gtg 915
 Ile Arg Asn Ser Thr Tyr Cys Met Lys Val Ser Ile Ser Leu Thr Val
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 Gly Glu Asn Asp Thr Gly Leu Cys Tyr Asn Ser Lys Met Lys Tyr Phe
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 Glu Lys Ala Glu Leu Ser Lys Ser Lys Glu Ile Ser Cys Arg Asp Ile
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 Glu Cys Arg Thr Lys Thr Trp Arg Pro Ser Ile Val Phe Lys Arg Asp
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 Thr Leu Leu Ile Arg Glu Val Arg Glu Asp Asp Ile Gly Asn Tyr Thr
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 Cys Glu Leu Lys Tyr Gly Gly Phe Val Val Arg Arg Thr Thr Glu Leu
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 Thr Val Thr Ala Pro Leu Thr Asp Lys Pro Pro Lys Leu Leu Tyr Pro

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aat cta acc tgc aga gct ttc ttt ggg tac agc gga gat gtc agt cct Asn Leu Thr Cys Arg Ala Phe Phe Gly Tyr Ser Gly Asp Val Ser Pro 265 270 275			1347
tta att tac tgg atg aaa gga gaa aaa ttt att gaa gat ctg gat gaa Leu Ile Tyr Trp Met Lys Gly Glu Lys Phe Ile Glu Asp Leu Asp Glu 280 285 290 295			1395
aat cga gtt tgg gaa agt gac att aga att ctt aag gag cat ctt ggg Asn Arg Val Trp Glu Ser Asp Ile Arg Ile Leu Lys Glu His Leu Gly 300 305 310			1443
gaa cag gaa gtt tcc atc tca tta att gtg gac tct gtg gaa gaa ggt Glu Gln Glu Val Ser Ile Ser Leu Ile Val Asp Ser Val Glu Glu Gly 315 320 325			1491
gac ttg gga aat tac tcc tgt tat gtt gaa aat gga aat gga cgt cga Asp Leu Gly Asn Tyr Ser Cys Tyr Val Glu Asn Gly Asn Gly Arg Arg 330 335 340			1539
cac gcc agc gtt ctc ctt cat aaa cga gag cta atg tac aca gtg gaa His Ala Ser Val Leu Leu His Lys Arg Glu Leu Met Tyr Thr Val Glu 345 350 355			1587
ctt gct gga ggc ctt ggt gct ata ctc ttg ctg ctt gta tgt ttg gtg Leu Ala Gly Gly Leu Gly Ala Ile Leu Leu Leu Val Cys Leu Val 360 365 370 375			1635
acc atc tac aag tgt tac aag ata gaa atc atg ctc ttc tac agg aat Thr Ile Tyr Lys Cys Tyr Lys Ile Glu Ile Met Leu Phe Tyr Arg Asn 380 385 390			1683
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tac tta tca tac acc aaa gtg gat cct gac cag tgg aat caa gag act Tyr Leu Ser Tyr Thr Lys Val Asp Pro Asp Gln Trp Asn Gln Glu Thr 410 415 420			1779
ggg gaa gaa gaa cgt ttt gcc ctt gaa atc cta cct gat atg ctt gaa Gly Glu Glu Glu Arg Phe Ala Leu Glu Ile Leu Pro Asp Met Leu Glu 425 430 435			1827
aag cat tat gga tat aag ttg ttt ata cca gat aga gat tta atc cca Lys His Tyr Gly Tyr Lys Leu Phe Ile Pro Asp Arg Asp Leu Ile Pro 440 445 450 455			1875
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cgg ctg att att gtc atg acc cca aat tac gta gtt aga agg ggc tgg Arg Leu Ile Ile Val Met Thr Pro Asn Tyr Val Val Arg Arg Gly Trp 475 480 485			1971
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gtc att aaa tgg cat gga cca aaa tgc aac aag ttg aac tcc aag ttc Val Ile Lys Trp His Gly Pro Lys Cys Asn Lys Leu Asn Ser Lys Phe 540 545 550			2163
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gta cct cct acc ggc acc ctg cct ctt acc tcc ata ggc aat cag cat Val Pro Pro Thr Gly Thr Leu Pro Leu Thr Ser Ile Gly Asn Gln His 635 640 645			2451
acc tac tgt aac atc cct atg aca ctc atc aac ggg cag cgg cca cag Thr Tyr Cys Asn Ile Pro Met Thr Leu Ile Asn Gly Gln Arg Pro Gln 650 655 660			2499
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ctttttttgc ttcattagtt tagttttaga atgggttttt attttatttc ctttttttaa			2951

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 gaaaacacag agcatacc atg gcc aag aaa gtt gca gtg att gga gct ggt 411
 Met Ala Lys Lys Val Ala Val Ile Gly Ala Gly
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 gtg agt ggc ctc tcc tcc atc aaa tgc tgt gtg gat gag gac ctg gag 459
 Val Ser Gly Leu Ser Ser Ile Lys Cys Cys Val Asp Glu Asp Leu Glu
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 ccc acc tgc ttt gag aga agt gat gac att ggg gga tta tgg aag ttt 507
 Pro Thr Cys Phe Glu Arg Ser Asp Asp Ile Gly Gly Leu Trp Lys Phe
 30 35 40
 act gaa tct tcc aaa gat ggg atg acc agg gtc tat aag tca tta gtg 555
 Thr Glu Ser Ser Lys Asp Gly Met Thr Arg Val Tyr Lys Ser Leu Val
 45 50 55
 aca aat gtc tgt aag gaa atg tca tgt tac agt gac ttc cct ttc cac 603
 Thr Asn Val Cys Lys Glu Met Ser Cys Tyr Ser Asp Phe Pro Phe His
 60 65 70 75
 gaa gat tat cct aat ttc atg aac cat gaa aaa ttt tgg gac tat ctc 651
 Glu Asp Tyr Pro Asn Phe Met Asn His Glu Lys Phe Trp Asp Tyr Leu
 80 85 90
 caa gaa ttt gct gag cac ttt gac ctc ctg aaa tac att cag ttt aag 699
 Gln Glu Phe Ala Glu His Phe Asp Leu Leu Lys Tyr Ile Gln Phe Lys
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 acc act gtg tgc agc ata acg aag cgt cca gac ttc tcc gaa act ggt 747
 Thr Thr Val Cys Ser Ile Thr Lys Arg Pro Asp Phe Ser Glu Thr Gly
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 cag tgg gat gtt gtc aca gag aca gag ggc aag caa aat aga gct gtc 795

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Phe	Asp	Ala	Val	Met	Val	Cys	Thr	Gly	His	Phe	Leu	Asn	Pro	His	Leu		
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Pro	Leu	Glu	Ala	Phe	Pro	Gly	Ile	His	Lys	Phe	Lys	Gly	Gln	Ile	Leu		
				160					165					170			
cat	agt	caa	gag	tac	aag	atc	cca	gaa	ggc	ttt	cag	ggc	aaa	cgc	gtc		939
His	Ser	Gln	Glu	Tyr	Lys	Ile	Pro	Glu	Gly	Phe	Gln	Gly	Lys	Arg	Val		
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Leu	Val	Ile	Gly	Leu	Gly	Asn	Thr	Gly	Gly	Asp	Ile	Ala	Val	Glu	Leu		
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Ser	Arg	Thr	Ala	Ala	Gln	Val	Leu	Leu	Ser	Thr	Arg	Thr	Gly	Thr	Trp		
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Val	Leu	Gly	Arg	Ser	Ser	Asp	Trp	Gly	Tyr	Pro	Tyr	Asn	Met	Met	Val		
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aca	aga	aga	tgc	tgt	agt	ttt	att	gca	caa	ggt	ctg	cct	tca	cgt	ttt		1131
Thr	Arg	Arg	Cys	Cys	Ser	Phe	Ile	Ala	Gln	Val	Leu	Pro	Ser	Arg	Phe		
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cta	aac	tgg	att	caa	gaa	agg	aag	ttg	aat	aag	aga	ttt	aat	cat	gag		1179
Leu	Asn	Trp	Ile	Gln	Glu	Arg	Lys	Leu	Asn	Lys	Arg	Phe	Asn	His	Glu		
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Asp	Tyr	Gly	Leu	Ser	Ile	Thr	Lys	Gly	Lys	Lys	Ala	Lys	Phe	Ile	Val		
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aat	gat	gag	ctg	cca	aac	tgt	atc	ctc	tgt	ggg	gca	atc	act	atg	aaa		1275
Asn	Asp	Glu	Leu	Pro	Asn	Cys	Ile	Leu	Cys	Gly	Ala	Ile	Thr	Met	Lys		
		285				290					295						
acc	agc	gtg	att	gaa	ttt	aca	gaa	acc	tct	gct	gtc	ttt	gaa	gat	ggg		1323
Thr	Ser	Val	Ile	Glu	Phe	Thr	Glu	Thr	Ser	Ala	Val	Phe	Glu	Asp	Gly		
300					305					310					315		
aca	gtg	gaa	gaa	aac	att	gat	ggt	gtg	atc	ttc	act	aca	gga	tat	aca		1371
Thr	Val	Glu	Glu	Asn	Ile	Asp	Val	Val	Ile	Phe	Thr	Thr	Gly	Tyr	Thr		
				320					325					330			
ttt	tct	ttt	cca	ttt	ttt	gaa	gaa	cct	ctt	aaa	agc	ctc	tgt	aca	aag		1419
Phe	Ser	Phe	Pro	Phe	Phe	Glu	Glu	Pro	Leu	Lys	Ser	Leu	Cys	Thr	Lys		
			335					340					345				
aag	ata	ttt	cta	tac	aag	caa	gtc	ttt	ccc	tta	aac	cta	gag	aga	gcg		1467
Lys	Ile	Phe	Leu	Tyr	Lys	Gln	Val	Phe	Pro	Leu	Asn	Leu	Glu	Arg	Ala		
		350					355					360					
aca	tta	gcc	atc	atc	ggc	ctt	atc	ggc	ctt	aaa	gga	tcc	atc	tta	tca		1515
Thr	Leu	Ala	Ile	Ile	Gly	Leu	Ile	Gly	Leu	Lys	Gly	Ser	Ile	Leu	Ser		
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Cys Lys Ile Pro Pro Ser Gln Lys Leu Met Met Glu Ala Thr Glu Lys	
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Glu Gln Leu Ile Lys Arg Gly Val Phe Lys Asp Thr Ser Lys Asp Lys	
415 420 425	
ttt gac tac att gcc tac atg gat gat atc gct gcc tgc ata ggc aca	1707
Phe Asp Tyr Ile Ala Tyr Met Asp Asp Ile Ala Ala Cys Ile Gly Thr	
430 435 440	
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Lys Pro Ser Ile Pro Leu Leu Phe Leu Lys Asp Pro Arg Leu Ala Trp	
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Glu Val Phe Phe Gly Pro Cys Thr Pro Tyr Gln Tyr Arg Leu Met Gly	
460 465 470 475	
cct gga aaa tgg gat gga gcc aga aat gcc atc ctg acc cag tgg gac	1851
Pro Gly Lys Trp Asp Gly Ala Arg Asn Ala Ile Leu Thr Gln Trp Asp	
480 485 490	
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Arg Thr Leu Lys Pro Leu Lys Thr Arg Ile Val Pro Asp Ser Ser Lys	
495 500 505	
cct gcc tcc atg tca cat tat tta aaa gcc tgg ggg gca cct gtc cta	1947
Pro Ala Ser Met Ser His Tyr Leu Lys Ala Trp Gly Ala Pro Val Leu	
510 515 520	
ctt gcc tct ctt cta ctt atc tgt aaa tct tca ctt ttc ttg aaa ttg	1995
Leu Ala Ser Leu Leu Leu Ile Cys Lys Ser Ser Leu Phe Leu Lys Leu	
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Val Arg Asp Lys Leu Gln Asp Arg Met Ser Pro Tyr Leu Val Ser Leu	
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                                   1

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Ala Gly Ile Ser Gln Asn Ala Lys Thr Gly Asp Leu Pro Ala Phe Gly
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gca ggc cac cag ggc ctg gtg gac ccc atc cag ttt gcc agg gct aac      307
Ala Gly His Gln Gly Leu Val Asp Pro Ile Gln Phe Ala Arg Ala Asn
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cag gcc atc cag atg gca tgc cag aac ttg gtg gac cct ggc agc agc      355
Gln Ala Ile Gln Met Ala Cys Gln Asn Leu Val Asp Pro Gly Ser Ser
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Pro Ser Gln Val Leu Ser Ala Ala Thr Ile Val Ala Lys His Thr Ser
          85                      90                      95

gcc ttg tgt aat gcc tgc cgc atc gcc tca tcc aag acg gcc aac cca      451
Ala Leu Cys Asn Ala Cys Arg Ile Ala Ser Ser Lys Thr Ala Asn Pro
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gta gcc aag agg cac ttc gtc cag tcg gcc aag gaa gtc gcc aac agc      499
Val Ala Lys Arg His Phe Val Gln Ser Ala Lys Glu Val Ala Asn Ser
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act gcc aac ctg gtg aag acc atc aag gcc ctg gat ggg gat ttc tct      547
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Glu Asp Asn Arg Asn Lys Cys Arg Ile Ala Thr Ala Pro Leu Ile Glu
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Ala Val Glu Asn Leu Thr Ala Phe Ala Ser Asn Pro Glu Phe Val Ser
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tcc atc gat ggc atc aac cgg tgc atc cgg gac atc gag cag gcc tcg Ser Ile Asp Gly Ile Asn Arg Cys Ile Arg Asp Ile Glu Gln Ala Ser	260	265	270	931
ctg gcc gcc gtc agc cag agc ctg gcc acg agg gac gac atc tct gtg Leu Ala Ala Val Ser Gln Ser Leu Ala Thr Arg Asp Asp Ile Ser Val	275	280	285	979
gag gcc ctg cag gag cag ctg act tcg gtg gtc cag gaa atc gga cac Glu Ala Leu Gln Glu Gln Leu Thr Ser Val Val Gln Glu Ile Gly His	290	295	300	1027
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gcc gca gtt ggt gtg gcc tcc aag att ctt gat cat cag cag cag atg Ala Ala Val Gly Val Ala Ser Lys Ile Leu Asp His Gln Gln Gln Met	340	345	350	1171
acg gtg ctg gac cag acc aag act ctc gca gag tct gcc ttg cag atg Thr Val Leu Asp Gln Thr Lys Thr Leu Ala Glu Ser Ala Leu Gln Met	355	360	365	1219
ttg tat gca gcc aaa gaa ggt ggc gga aac ccc aag gca caa cac acc Leu Tyr Ala Ala Lys Glu Gly Gly Gly Asn Pro Lys Ala Gln His Thr	370	375	380	1267
cat gac gcc atc aca gag gcc gcc cag ttg atg aag gaa gcc gtg gat His Asp Ala Ile Thr Glu Ala Ala Gln Leu Met Lys Glu Ala Val Asp	390	395	400	1315
gac atc atg gtg acg ctg aac gaa gct gcc agt gaa gtg ggg ctg gtt Asp Ile Met Val Thr Leu Asn Glu Ala Ala Ser Glu Val Gly Leu Val	405	410	415	1363
ggg ggc atg gtg gac gcc att gca gaa gcc atg agc aag ctg gat gaa Gly Gly Met Val Asp Ala Ile Ala Glu Ala Met Ser Lys Leu Asp Glu	420	425	430	1411
ggc act cct cca gaa cca aag gga aca ttt gtc gac tat cag acg act Gly Thr Pro Pro Glu Pro Lys Gly Thr Phe Val Asp Tyr Gln Thr Thr	435	440	445	1459
gtg gtt aaa tac tcc aaa agc att gcg gtg aca gct cag gaa atg atg Val Val Lys Tyr Ser Lys Ser Ile Ala Val Thr Ala Gln Glu Met Met	450	455	460	1507
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470								475					480					
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485								490					495					
gcc acg gcg gaa cca gag gag atc gga ttc cag att cgc act cgt gtg	Ala Thr Ala Glu Pro Glu Glu Ile Gly Phe Gln Ile Arg Thr Arg Val	1651																
500								505					510					
cag gac ctg ggc cac ggc tgt atc ttc ctg gtg cag aag gca ggg gcc	Gln Asp Leu Gly His Gly Cys Ile Phe Leu Val Gln Lys Ala Gly Ala	1699																
515								520					525					
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		Met	Phe	Gly	Cys	Leu	Val	Ala	Gly	Arg	Leu	Val				
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Gln	Thr	Ala	Ala	Gln	Gln	Val	Ala	Glu	Asp	Lys	Phe	Val	Phe	Asp	Leu	
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Pro	Asp	Tyr	Glu	Ser	Ile	Asn	His	Val	Val	Val	Phe	Met	Leu	Gly	Thr	
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Ile	Pro	Phe	Pro	Glu	Gly	Met	Gly	Gly	Ser	Val	Tyr	Phe	Ser	Tyr	Pro	
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Val	Ala	Gln	Ile	Gly	Ile	Ser	Val	Glu	Leu	Leu	Asp	Ser	Met	Ala	Gln	
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Gln	Thr	Pro	Val	Gly	Asn	Ala	Ala	Val	Ser	Ser	Val	Asp	Ser	Phe	Thr	
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 Gln Phe Thr Gln Lys Met Leu Asp Asn Phe Tyr Asn Phe Ala Ser Ser
 140 145 150 155

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 Phe Ala Val Ser Gln Ala Gln Met Thr Pro Ser Pro Ser Glu Met Phe
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 Ile Pro Ala Asn Val Val Leu Lys Trp Tyr Glu Asn Phe Gln Arg Arg
 175 180 185

cta gca cag aac cct ctc ttt tgg aaa aca taa tttgaata aaataatttt 990
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 Met Ala Gly Gly Met Lys Val Ala Val Ser Pro Ala Val
 1 5 10

ggt ccc ggg ccc tgg ggc tcg gga gtc ggg ggc ggt ggg aca gtg cgg 158
 Gly Pro Gly Pro Trp Gly Ser Gly Val Gly Gly Gly Gly Thr Val Arg
 15 20 25

cta ctc ttg atc ctc tcc ggc tgc ttg gtc tac ggc aca gct gaa act 206
 Leu Leu Leu Ile Leu Ser Gly Cys Leu Val Tyr Gly Thr Ala Glu Thr
 30 35 40 45

gat gta aat gtg gtc atg ctt cag gaa tcc caa gtt tgt gaa aag cgt 254
 Asp Val Asn Val Val Met Leu Gln Glu Ser Gln Val Cys Glu Lys Arg
 50 55 60

gcc agc caa caa ttc tgt tac aca aat gtg ctt atc cca caa tgg cat 302
 Ala Ser Gln Gln Phe Cys Tyr Thr Asn Val Leu Ile Pro Gln Trp His
 65 70 75

gat ata tgg aca cgg ata cag atc cga gta aat agt tcc aga ttg gtt 350
 Asp Ile Trp Thr Arg Ile Gln Ile Arg Val Asn Ser Ser Arg Leu Val
 80 85 90

cga gtc acc cag gtg gag aat gag gag aaa ctg aag gag cta gag cag 398
 Arg Val Thr Gln Val Glu Asn Glu Glu Lys Leu Lys Glu Leu Glu Gln
 95 100 105

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 Phe Ser Ile Trp Asn Phe Phe Ser Ser Phe Leu Lys Glu Lys Leu Asn
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gac acc tat gtt aac gtg ggt cta tac agc aca aaa acc tgc ctc aaa	494
Asp Thr Tyr Val Asn Val Gly Leu Tyr Ser Thr Lys Thr Cys Leu Lys	
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gtt gag att ata gag aag gac acc aag tac agt gtc att gtg atc cgg	542
Val Glu Ile Ile Glu Lys Asp Thr Lys Tyr Ser Val Ile Val Ile Arg	
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Arg Phe Asp Pro Lys Leu Phe Leu Val Phe Leu Leu Gly Leu Met Leu	
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Phe Phe Cys Gly Asp Leu Leu Ser Arg Ser Gln Ile Phe Tyr Tyr Ser	
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Thr Gly Met Thr Val Gly Ile Val Ala Ser Leu Leu Ile Ile Ile Phe	
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Pro Leu Glu Asn Glu Arg Ser Ile Asn Leu Leu Thr Trp Thr Leu Gln	
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Ile Ala Gln Asp Glu Ile Tyr Glu Glu Ala Ser Ser Glu Glu Glu Asp	
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Met Gly Lys Ser Gly Ser Gly Lys Thr Ser Met Arg Ser Ile Ile Phe		
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Ala Asn Tyr Ile Ala Arg Asp Thr Arg Arg Leu Gly Ala Thr Ile Leu		
65 70 75		
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Asp Arg Ile His Ser Leu Gln Ile Asn Ser Ser Leu Ser Thr Tyr Ser		
80 85 90		
ctc gta gac tct gtt gga aat aca aag aca ttt gat gta gaa cat tct	936	
Leu Val Asp Ser Val Gly Asn Thr Lys Thr Phe Asp Val Glu His Ser		
95 100 105		
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His Val Arg Phe Leu Gly Asn Leu Val Leu Asn Leu Trp Asp Cys Gly		
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Glu Glu Asp Leu Arg Arg Leu Ser Arg Pro Leu Glu Cys Ser Cys Phe		
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Arg Thr Ser Ile Trp Asp Glu Thr Leu Tyr Lys Ala Trp Ser Ser Ile		
225 230 235		
gtt tat cag ctg att ccc aat gtt cag cag ctg gaa atg aac cta agg	1368	
Val Tyr Gln Leu Ile Pro Asn Val Gln Gln Leu Glu Met Asn Leu Arg		
240 245 250		

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 Asn Phe Ala Glu Ile Ile Glu Ala Asp Glu Val Leu Leu Phe Glu Arg
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 Ala Thr Phe Leu Val Ile Ser His Tyr Gln Cys Lys Glu Gln Arg Asp
 270 275 280 285

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 Ala His Arg Phe Glu Lys Ile Ser Asn Ile Ile Lys Gln Phe Lys Leu
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 350 355 360 365

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 370 375

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<220>
 <221> CDS
 <222> (610)..(1650)

<400> 493
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 ccccgccggc tgagtctccg agcggccggg ctcggaagcc acgagccagc tgaggcgttc 180

1288

Cys	Ser	Cys	Phe	Arg	Thr	Ser	Ile	Trp	Asp	Glu	Thr	Leu	Tyr	Lys	Ala	
190					195					200					205	
tgg	tcc	agc	ata	gtt	tat	cag	ctg	att	ccc	aat	ggt	cag	cag	ctg	gaa	1272
Trp	Ser	Ser	Ile	Val	Tyr	Gln	Leu	Ile	Pro	Asn	Val	Gln	Gln	Leu	Glu	
			210						215					220		
atg	aac	cta	agg	aat	ttt	gct	gaa	att	atc	gaa	gct	gat	gaa	gta	ctt	1320
Met	Asn	Leu	Arg	Asn	Phe	Ala	Glu	Ile	Ile	Glu	Ala	Asp	Glu	Val	Leu	
			225					230					235			
ctt	ttt	gag	aga	gct	act	ttt	ctg	gta	att	tct	cac	tat	cag	tgt	aaa	1368
Leu	Phe	Glu	Arg	Ala	Thr	Phe	Leu	Val	Ile	Ser	His	Tyr	Gln	Cys	Lys	
		240					245					250				
gag	cag	cgt	gat	gcc	cat	aga	ttt	gag	aaa	ata	agc	aac	att	att	aag	1416
Glu	Gln	Arg	Asp	Ala	His	Arg	Phe	Glu	Lys	Ile	Ser	Asn	Ile	Ile	Lys	
	255					260					265					
cag	ttc	aag	ctg	agc	tgc	agc	aag	ctg	gct	gcc	tct	ttc	cag	agt	atg	1464
Gln	Phe	Lys	Leu	Ser	Cys	Ser	Lys	Leu	Ala	Ala	Ser	Phe	Gln	Ser	Met	
270					275					280					285	
gaa	gtc	agg	aac	tct	aac	ttc	gct	gct	ttc	att	gac	atc	ttt	aca	tcc	1512
Glu	Val	Arg	Asn	Ser	Asn	Phe	Ala	Ala	Phe	Ile	Asp	Ile	Phe	Thr	Ser	
			290						295					300		
aac	act	tat	gtg	atg	gtt	gtg	atg	tct	gat	ccg	tcc	att	cct	tct	gca	1560
Asn	Thr	Tyr	Val	Met	Val	Val	Met	Ser	Asp	Pro	Ser	Ile	Pro	Ser	Ala	
			305					310					315			
gct	act	ctg	atc	aac	atc	cgc	aat	gcc	agg	aaa	cac	ttt	gaa	aag	ctg	1608
Ala	Thr	Leu	Ile	Asn	Ile	Arg	Asn	Ala	Arg	Lys	His	Phe	Glu	Lys	Leu	
		320					325					330				
gaa	aga	gtg	gat	gga	cca	aag	cag	tgt	ctt	ctc	atg	cgc	taa	acattga		1657
Glu	Arg	Val	Asp	Gly	Pro	Lys	Gln	Cys	Leu	Leu	Met	Arg	*			
	335					340					345					
tgaatattgt	ttcacacaaa	aattaaaagt	ttcctaatta	atgttgtatt	catatatgta											1717
ggctctgaaa	tggttgatg	cttattgctt	ctgtatttct	tctctactcc	ctagtcttaa											1777
tgtttaacct	tgaatgctat	taacttaa	agccattgag	gagttagaag	atgaattggt											1837
catgaagtcg	gtgttacata	aaagtaggtg	atatgtaagt	tttctgataa	caagggttcta											1897
atagtgttta	aatgtactgg	taacctgggt	ccaatagttg	tgtttgccca	agcctttctc											1957
ggcatcatct	tgtattcctt	atcagatagt	aagtaacctg	taagtttgga	gtattactgt											2017
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<210> 494

<211> 2188

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (610) .. (1773)

<400> 494

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ccccgccggc tgagtctccg agcggccggg ctcggaagcc acgagccagc tgaggcgttc 180

tccgcttagt gcctacggca tgggtcagct ctttctgcca cctccgcctt cgcggtcttc 240

acctctttgc ggggtgaagtt acctttgggt ttccagacct tgggggcctg aggcccaaac 300

tcgggacgaa cccctaacc acctctcttt tcctgtcatt ctccaactct tactttgtac 360

cacggaatca cttggcctta aagctagcca gctcggccgt gccttgaggc caggttcgag 420

agataaaggt aaccgtgggg aaagcggccc ccagtgagc aaaggcggag gcaagaatag 480

agcaggcctg agggccatag gcgatgagaa taggcagttg aggggtgaaa aagaaaacaa 540

acaaacaaca acaacaacc ctgaagagta ctgaagattt agaagggact ggaaaggact 600

tgttgcgca atg gaa gaa tct gac tct gag aaa acg acg gag aaa gaa 648
Met Glu Glu Ser Asp Ser Glu Lys Thr Thr Glu Lys Glu
1 5 10

aat ctg ggg ccg aga atg gat cca cca cta ggg gaa ccg gaa gga tcg 696
Asn Leu Gly Pro Arg Met Asp Pro Pro Leu Gly Glu Pro Glu Gly Ser
15 20 25

ctt ggg tgg gtg cta cca aat aca gcc atg aag aaa aag gta aga cgt 744
Leu Gly Trp Val Leu Pro Asn Thr Ala Met Lys Lys Lys Val Arg Arg
30 35 40 45

gtt aga tac gtc aaa acc atg aag aaa aag gtg ctg ttg atg ggt aaa 792
Val Arg Tyr Val Lys Thr Met Lys Lys Lys Val Leu Leu Met Gly Lys
50 55 60

agt ggg tct ggt aag acc agc atg agg tct att atc ttt gca aat tat 840
Ser Gly Ser Gly Lys Thr Ser Met Arg Ser Ile Ile Phe Ala Asn Tyr
65 70 75

att gcc aga gac aca cgt cgc ctt ggc gca aca ata cta gac cgt ata 888
Ile Ala Arg Asp Thr Arg Arg Leu Gly Ala Thr Ile Leu Asp Arg Ile
80 85 90

cat agt ctt caa att aat agc agt ttg agc acc tac tct ctc gta gac 936
His Ser Leu Gln Ile Asn Ser Ser Leu Ser Thr Tyr Ser Leu Val Asp
95 100 105

tct gtt gga aat aca aag aca ttt gat gta gaa cat tct cat gtt cga 984
Ser Val Gly Asn Thr Lys Thr Phe Asp Val Glu His Ser His Val Arg
110 115 120 125

ttt ctg gga aac ctg gta ttg aac ctg tgg gat tgt ggt ggg caa gac 1032
Phe Leu Gly Asn Leu Val Leu Asn Leu Trp Asp Cys Gly Gly Gln Asp
130 135 140

acc ttc atg gaa aat tat ttc act agc caa cgg gac aac atc ttc cga 1080
Thr Phe Met Glu Asn Tyr Phe Thr Ser Gln Arg Asp Asn Ile Phe Arg
145 150 155

aat gtg gag gtt ctg att tat gtc ttt gat gtg gag agc cgc gaa ctg 1128
Asn Val Glu Val Leu Ile Tyr Val Phe Asp Val Glu Ser Arg Glu Leu

160	165	170	
gaa aag gac atg cac tat tac caa tca tgc ctg gag gcc att ctg cag Glu Lys Asp Met His Tyr Tyr Gln Ser Cys Leu Glu Ala Ile Leu Gln 175 180 185			1176
aat tct cca gat gcc aaa ata ttt tgc ttg gta cac aaa atg gat ctg Asn Ser Pro Asp Ala Lys Ile Phe Cys Leu Val His Lys Met Asp Leu 190 195 200 205			1224
gta cag gag gat caa cgg gac ctg att ttt aaa gag cga gaa gaa gat Val Gln Glu Asp Gln Arg Asp Leu Ile Phe Lys Glu Arg Glu Glu Asp 210 215 220			1272
ttg agg cgt ttg tct cgc cca ttg gaa tgt tct tgt ttc cga aca tct Leu Arg Arg Leu Ser Arg Pro Leu Glu Cys Ser Cys Phe Arg Thr Ser 225 230 235			1320
atc tgg gat gaa acc ctc tat aag gct tgg tcc agc ata gtt tat cag Ile Trp Asp Glu Thr Leu Tyr Lys Ala Trp Ser Ser Ile Val Tyr Gln 240 245 250			1368
ctg att ccc aat gtt cag cag ctg gaa atg aac cta agg aat ttt gct Leu Ile Pro Asn Val Gln Gln Leu Glu Met Asn Leu Arg Asn Phe Ala 255 260 265			1416
gaa att atc gaa gct gat gaa gta ctt ctt ttt gag aga gct act ttt Glu Ile Ile Glu Ala Asp Glu Val Leu Leu Phe Glu Arg Ala Thr Phe 270 275 280 285			1464
ctg gta att tct cac tat cag tgt aaa gag cag cgt gat gcc cat aga Leu Val Ile Ser His Tyr Gln Cys Lys Glu Gln Arg Asp Ala His Arg 290 295 300			1512
ttt gag aaa ata agc aac att att aag cag ttc aag ctg agc tgc agc Phe Glu Lys Ile Ser Asn Ile Ile Lys Gln Phe Lys Leu Ser Cys Ser 305 310 315			1560
aag ctg gct gcc tct ttc cag agt atg gaa gtc agg aac tct aac ttc Lys Leu Ala Ala Ser Phe Gln Ser Met Glu Val Arg Asn Ser Asn Phe 320 325 330			1608
gct gct ttc att gac atc ttt aca tcc aac act tat gtg atg gtt gtg Ala Ala Phe Ile Asp Ile Phe Thr Ser Asn Thr Tyr Val Met Val Val 335 340 345			1656
atg tct gat ccg tcc att cct tct gca gct act ctg atc aac atc cgc Met Ser Asp Pro Ser Ile Pro Ser Ala Ala Thr Leu Ile Asn Ile Arg 350 355 360 365			1704
aat gcc agg aaa cac ttt gaa aag ctg gaa aga gtg gat gga cca aag Asn Ala Arg Lys His Phe Glu Lys Leu Glu Arg Val Asp Gly Pro Lys 370 375 380			1752
cag tgt ctt ctc atg cgc taa ac attgatgaat attgtttcac acaaaaatta Gln Cys Leu Leu Met Arg *			1805 385
aaagtttcct aattaatggtt gtattcatat atgtaggctc tgaaatggtg tgatgcttat			1865
tgcttctgta tttcttctct actccctagt cttaatgttt aaccttgaat gctattaact			1925
taaatagcca ttgaggagtt agaagatgaa ttgttcatga agtcggtggtt acataaaagt			1985

aggtgatatg taagttttct gataacaagg ttctaatagt gtttaaagt actggtaacc 2045
 tggttccaat agttgtgttt gcccaagcct ttctcgcat catcttgat tccttatcag 2105
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 ccttaacttc aaaaaaaaaa aaa 2188

<210> 495
 <211> 7818
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (61)..(2931)

<400> 495
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 atg gcc agc aag agg aaa tcc acc aca cca tgc atg atc cca gtg aag 108
 Met Ala Ser Lys Arg Lys Ser Thr Thr Pro Cys Met Ile Pro Val Lys
 1 5 10 15
 act gtg gtg ttg caa gat gcc agc atg gag gcc cag ccc gct gag acc 156
 Thr Val Val Leu Gln Asp Ala Ser Met Glu Ala Gln Pro Ala Glu Thr
 20 25 30
 ttg cct gaa gga ccc cag cag gat ctg ccc cca gaa gca tct gct gcc 204
 Leu Pro Glu Gly Pro Gln Gln Asp Leu Pro Pro Glu Ala Ser Ala Ala
 35 40 45
 agc agt gag gca gca cag aac ccc agc agt act gat ggc tct aca ctg 252
 Ser Ser Glu Ala Ala Gln Asn Pro Ser Ser Thr Asp Gly Ser Thr Leu
 50 55 60
 gcc aat ggg cat cgg agc act tta gat ggc tat tta tat tcc tgt aaa 300
 Ala Asn Gly His Arg Ser Thr Leu Asp Gly Tyr Leu Tyr Ser Cys Lys
 65 70 75 80
 tac tgc gat ttc aga tcc cat gac atg acc caa ttt gtg gga cat atg 348
 Tyr Cys Asp Phe Arg Ser His Asp Met Thr Gln Phe Val Gly His Met
 85 90 95
 aac tca gag cac aca gac ttt aat aaa gac cca acc ttt gta tgc agt 396
 Asn Ser Glu His Thr Asp Phe Asn Lys Asp Pro Thr Phe Val Cys Ser
 100 105 110
 ggg tgc agt ttt ctg gca aaa acc cct gag ggg ctt tcc ttg cac aat 444
 Gly Cys Ser Phe Leu Ala Lys Thr Pro Glu Gly Leu Ser Leu His Asn
 115 120 125
 gcc aca tgt cac tcc ggg gaa gcc agc ttt gtg tgg aac gtg gcc aag 492
 Ala Thr Cys His Ser Gly Glu Ala Ser Phe Val Trp Asn Val Ala Lys
 130 135 140
 cca gac aat cat gtg gtt gtg gag cag agc atc cct gag agc acc agc 540
 Pro Asp Asn His Val Val Val Glu Gln Ser Ile Pro Glu Ser Thr Ser
 145 150 155 160
 act cct gac cta gcg ggt gag ccc agt gct gaa ggg gct gat gga cag 588

Thr	Pro	Asp	Leu	Ala	Gly	Glu	Pro	Ser	Ala	Glu	Gly	Ala	Asp	Gly	Gln	
				165					170					175		
gca	gaa	atc	atc	att	acc	aaa	act	cca	atc	atg	aag	ata	atg	aaa	ggc	636
Ala	Glu	Ile	Ile	Ile	Thr	Lys	Thr	Pro	Ile	Met	Lys	Ile	Met	Lys	Gly	
			180					185					190			
aaa	gct	gaa	gcc	aaa	aaa	att	cat	aca	ctc	aag	gag	aat	gtc	cct	agc	684
Lys	Ala	Glu	Ala	Lys	Lys	Ile	His	Thr	Leu	Lys	Glu	Asn	Val	Pro	Ser	
			195				200					205				
cag	cct	gtg	ggt	gag	gcc	tta	cca	aag	ctg	tcg	act	gga	gaa	atg	gag	732
Gln	Pro	Val	Gly	Glu	Ala	Leu	Pro	Lys	Leu	Ser	Thr	Gly	Glu	Met	Glu	
	210					215					220					
gtg	aga	gag	ggg	gac	cat	tcc	ttc	atc	aat	ggg	gca	gtt	cca	gtc	agc	780
Val	Arg	Glu	Gly	Asp	His	Ser	Phe	Ile	Asn	Gly	Ala	Val	Pro	Val	Ser	
225					230					235					240	
cag	gca	tct	gcc	agc	tct	gca	aaa	aac	ccc	cat	gcc	gcc	aac	ggg	ccc	828
Gln	Ala	Ser	Ala	Ser	Ser	Ala	Lys	Asn	Pro	His	Ala	Ala	Asn	Gly	Pro	
				245					250					255		
ctg	ata	gga	aca	gtg	cca	gtt	ttg	cca	gct	ggc	ata	gca	cag	ttc	ctc	876
Leu	Ile	Gly	Thr	Val	Pro	Val	Leu	Pro	Ala	Gly	Ile	Ala	Gln	Phe	Leu	
			260					265					270			
tcc	ctc	cag	cag	cag	ccc	cca	gtg	cat	gcc	caa	cac	cat	gtc	cac	cag	924
Ser	Leu	Gln	Gln	Gln	Pro	Pro	Val	His	Ala	Gln	His	His	Val	His	Gln	
		275					280					285				
cca	ctg	ccc	acg	gcc	aag	gcc	ctt	ccc	aaa	gtg	atg	atc	ccc	ctg	agc	972
Pro	Leu	Pro	Thr	Ala	Lys	Ala	Leu	Pro	Lys	Val	Met	Ile	Pro	Leu	Ser	
	290					295					300					
agc	att	cca	acg	tac	agt	gca	gcc	atg	gac	tct	aac	agc	ttc	ctg	aag	1020
Ser	Ile	Pro	Thr	Tyr	Ser	Ala	Ala	Met	Asp	Ser	Asn	Ser	Phe	Leu	Lys	
305					310					315					320	
aac	tcc	ttc	cac	aag	ttc	ccc	tac	ccc	acc	aaa	gcc	gag	ctc	tgc	tat	1068
Asn	Ser	Phe	His	Lys	Phe	Pro	Tyr	Pro	Thr	Lys	Ala	Glu	Leu	Cys	Tyr	
				325					330					335		
ttg	act	gtg	gtg	acc	aag	tat	cca	gaa	gaa	cag	ctc	aag	atc	tgg	ttc	1116
Leu	Thr	Val	Val	Thr	Lys	Tyr	Pro	Glu	Glu	Gln	Leu	Lys	Ile	Trp	Phe	
			340					345					350			
aca	gcc	caa	agg	ctg	aag	cag	ggg	atc	agc	tgg	tcc	cct	gag	gag	att	1164
Thr	Ala	Gln	Arg	Leu	Lys	Gln	Gly	Ile	Ser	Trp	Ser	Pro	Glu	Glu	Ile	
		355					360					365				
gag	gat	gcc	cgg	aaa	aag	atg	ttc	aat	aca	gtc	atc	cag	tct	gtg	cct	1212
Glu	Asp	Ala	Arg	Lys	Lys	Met	Phe	Asn	Thr	Val	Ile	Gln	Ser	Val	Pro	
	370					375					380					
cag	ccc	aca	att	acg	gtt	cta	aat	acc	cca	ctc	gtc	gcc	agt	gct	ggc	1260
Gln	Pro	Thr	Ile	Thr	Val	Leu	Asn	Thr	Pro	Leu	Val	Ala	Ser	Ala	Gly	
					390					395					400	
aat	gtc	cag	cat	ctc	atc	cag	gcc	gct	ctt	cca	ggt	cac	gtt	gtg	ggg	1308
Asn	Val	Gln	His	Leu	Ile	Gln	Ala	Ala	Leu	Pro	Gly	His	Val	Val	Gly	
				405					410					415		
cag	cca	gag	ggt	aca	gga	ggg	gga	ctt	ctg	gtc	act	cag	cca	ttg	atg	1356

Gln	Pro	Glu	Gly	Thr	Gly	Gly	Gly	Leu	Leu	Val	Thr	Gln	Pro	Leu	Met	
			420					425					430			
gcc	aat	ggg	ttg	caa	gca	aca	agt	tcc	cct	ctc	ccc	ctc	acg	gtg	aca	1404
Ala	Asn	Gly	Leu	Gln	Ala	Thr	Ser	Ser	Pro	Leu	Pro	Leu	Thr	Val	Thr	
		435					440					445				
tcc	gtc	ccc	aag	cag	cca	ggg	gtg	gca	ccc	att	aac	act	gtg	tgt	tca	1452
Ser	Val	Pro	Lys	Gln	Pro	Gly	Val	Ala	Pro	Ile	Asn	Thr	Val	Cys	Ser	
		450				455					460					
aat	aca	acg	tca	gct	gtg	aag	gtg	gtc	aat	gcg	gcc	cag	tcg	ctc	ctc	1500
Asn	Thr	Thr	Ser	Ala	Val	Lys	Val	Val	Asn	Ala	Ala	Gln	Ser	Leu	Leu	
465					470					475					480	
acg	gcc	tgc	ccc	agc	ata	acc	tcc	caa	gcc	ttc	ctt	gat	gct	agc	atc	1548
Thr	Ala	Cys	Pro	Ser	Ile	Thr	Ser	Gln	Ala	Phe	Leu	Asp	Ala	Ser	Ile	
				485					490					495		
tac	aaa	aat	aag	aaa	tct	cat	gaa	cag	ctg	tca	gct	ctg	aaa	ggg	agc	1596
Tyr	Lys	Asn	Lys	Lys	Ser	His	Glu	Gln	Leu	Ser	Ala	Leu	Lys	Gly	Ser	
			500					505					510			
ttc	tgt	cgg	aac	cag	ttc	cca	ggg	cag	agc	gaa	gtt	gaa	cat	ctc	aca	1644
Phe	Cys	Arg	Asn	Gln	Phe	Pro	Gly	Gln	Ser	Glu	Val	Glu	His	Leu	Thr	
		515					520					525				
aaa	gtg	acg	ggc	ctc	agt	acc	aga	gag	gtg	cgg	aaa	tgg	ttc	agt	gat	1692
Lys	Val	Thr	Gly	Leu	Ser	Thr	Arg	Glu	Val	Arg	Lys	Trp	Phe	Ser	Asp	
		530				535					540					
cgt	aga	tac	cac	tgc	cgg	aac	ttg	aag	ggc	tcc	aga	gcg	atg	ata	cct	1740
Arg	Arg	Tyr	His	Cys	Arg	Asn	Leu	Lys	Gly	Ser	Arg	Ala	Met	Ile	Pro	
545					550					555					560	
gga	gat	cac	agt	tcc	atc	atc	att	gac	tct	gtg	cca	gag	gtg	tcc	ttc	1788
Gly	Asp	His	Ser	Ser	Ile	Ile	Ile	Asp	Ser	Val	Pro	Glu	Val	Ser	Phe	
				565					570					575		
tcc	cca	tcg	tcc	aag	gtc	cct	gag	gta	acc	tgc	att	ccg	aca	aca	gcc	1836
Ser	Pro	Ser	Ser	Lys	Val	Pro	Glu	Val	Thr	Cys	Ile	Pro	Thr	Thr	Ala	
				580				585					590			
aca	cta	gca	acc	cac	cct	tct	gcc	aaa	cga	caa	tct	tgg	cac	cag	act	1884
Thr	Leu	Ala	Thr	His	Pro	Ser	Ala	Lys	Arg	Gln	Ser	Trp	His	Gln	Thr	
		595					600					605				
cct	gac	ttc	aca	cca	acc	aaa	tac	aag	gag	aga	gcc	cct	gag	cag	ctc	1932
Pro	Asp	Phe	Thr	Pro	Thr	Lys	Tyr	Lys	Glu	Arg	Ala	Pro	Glu	Gln	Leu	
		610				615					620					
aga	gcc	ctg	gag	agc	agt	ttt	gca	caa	aac	cct	ctt	cct	ctt	gat	gag	1980
Arg	Ala	Leu	Glu	Ser	Ser	Phe	Ala	Gln	Asn	Pro	Leu	Pro	Leu	Asp	Glu	
625					630					635					640	
gaa	ctg	gac	cgc	ctg	aga	agt	gaa	acc	aaa	atg	acc	cga	cga	gaa	att	2028
Glu	Leu	Asp	Arg	Leu	Arg	Ser	Glu	Thr	Lys	Met	Thr	Arg	Arg	Glu	Ile	
				645					650					655		
gat	agc	tgg	ttt	tca	gag	aga	cgg	aaa	aaa	gtg	aat	gct	gag	gag	acc	2076
Asp	Ser	Trp	Phe	Ser	Glu	Arg	Arg	Lys	Lys	Val	Asn	Ala	Glu	Glu	Thr	
			660					665					670			
aag	aag	gct	gag	gag	aat	gcc	tct	cag	gag	gaa	gag	gag	gct	gct	gag	2124

Lys Lys Ala Glu Glu Asn Ala Ser Gln Glu Glu Glu Glu Ala Ala Glu	
675 680 685	
gat gag ggt gga gaa gag gat ttg gcc agt gag cta agg gtc tct ggt	2172
Asp Glu Gly Gly Glu Glu Asp Leu Ala Ser Glu Leu Arg Val Ser Gly	
690 695 700	
gaa aat ggc tct ctg gaa atg ccc agc agc cat atc ttg gca gag cgc	2220
Glu Asn Gly Ser Leu Glu Met Pro Ser Ser His Ile Leu Ala Glu Arg	
705 710 715 720	
aaa gtc agc ccc att aaa atc aac ctg aag aac ctg agg gtc act gaa	2268
Lys Val Ser Pro Ile Lys Ile Asn Leu Lys Asn Leu Arg Val Thr Glu	
725 730 735	
gcc aat ggc agg aac gag att cca ggg ctg ggt gcc tgt gac cct gag	2316
Ala Asn Gly Arg Asn Glu Ile Pro Gly Leu Gly Ala Cys Asp Pro Glu	
740 745 750	
gat gat gag tca aac aaa ctg gca gag cag ctc cca ggc aaa gtg agc	2364
Asp Asp Glu Ser Asn Lys Leu Ala Glu Gln Leu Pro Gly Lys Val Ser	
755 760 765	
tgc aaa aag act gcc cag cag cgg cac ttg ctg cgg cag ctc ttt gtc	2412
Cys Lys Lys Thr Ala Gln Gln Arg His Leu Leu Arg Gln Leu Phe Val	
770 775 780	
cag aca cag tgg cca agc aac cag gac tat gac tcc atc atg gcc cag	2460
Gln Thr Gln Trp Pro Ser Asn Gln Asp Tyr Asp Ser Ile Met Ala Gln	
785 790 795 800	
acg ggt ctg cca cgg cca gag gtg gtg cgc tgg ttt gga gat agc agg	2508
Thr Gly Leu Pro Arg Pro Glu Val Val Arg Trp Phe Gly Asp Ser Arg	
805 810 815	
tac gca ctg aag aac ggc caa ctc aaa tgg tac gaa gac tat aag cga	2556
Tyr Ala Leu Lys Asn Gly Gln Leu Lys Trp Tyr Glu Asp Tyr Lys Arg	
820 825 830	
ggc aac ttc cca cca ggg cta ctg gtc att gcc cct ggc aac cgg gag	2604
Gly Asn Phe Pro Pro Gly Leu Leu Val Ile Ala Pro Gly Asn Arg Glu	
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Gln Trp Phe Ala Glu Lys Met Gly Glu Glu Thr Arg Ala Val Ala Asp	
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Thr Gly Ser Glu Asp Gln Gly Pro Gly Thr Gly Glu Leu Thr Ala Val	
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His Lys Gly Met Gly Asp Thr Tyr Ser Glu Val Ser Glu Asn Ser Glu	
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Arg Ser Arg His Val Thr Gly Ala Ala Arg Ser Pro Ser Arg Ala Gly
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gcc tac ggc aag gtg ttc ctg gtg cgg aag gcg ggc ggg cac gac gcg Ala Tyr Gly Lys Val Phe Leu Val Arg Lys Ala Gly Gly His Asp Ala 110 115 120			508
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Phe Thr Leu Gln Tyr Ala Ala Pro Glu Leu Leu Ala Gln Gln Gly Tyr				
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Ser Gln Ala Ala Glu Ile Met Cys Lys Ile Arg Glu Gly Arg Phe Ser				
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Leu Asp Gly Glu Ala Trp Gln Gly Val Ser Glu Glu Ala Lys Glu Leu				
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Val Arg Gly Leu Leu Thr Val Asp Pro Ala Lys Arg Leu Lys Leu Glu				
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Pro Pro Leu Arg Thr Pro Asp Val Leu Glu Ser Ser Gly Pro Ala Val				
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Arg Ser Gly Leu Asn Ala Thr Phe Met Ala Phe Asn Arg Gly Lys Arg				
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Glu Gly Phe Phe Leu Lys Ser Val Glu Asn Ala Pro Leu Ala Lys Arg				
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Arg Lys Gln Lys Leu Arg Ser Ala Thr Ala Ser Arg Arg Gly Ser Pro				
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Ala Pro Ala Asn Pro Gly Arg Ala Pro Val Ala Ser Lys Gly Ala Pro				
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830

835

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gcggccatag agaatgaact gtgtttgtgt ttagagaaga cacactcccc acccctgaac 180
aggcttctta aaagtactag aaaggaacag aa atg aat aaa agt cgc tgg cag 233
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Ser Arg Arg Arg His Gly Arg Arg Ser His Gln Gln Asn Pro Trp Phe
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aga ctc cgt gat tct gaa gac agg tct gac tcc cgg gca gca cag ccc 329
Arg Leu Arg Asp Ser Glu Asp Arg Ser Asp Ser Arg Ala Ala Gln Pro
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gct cac gat tcc ggc cac ggt gat gac gag tct ccg tca acc tcg tct 377
Ala His Asp Ser Gly His Gly Asp Asp Glu Ser Pro Ser Thr Ser Ser
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Asp	Pro	Glu	Lys	Lys	Arg	Tyr	Phe	Arg	Leu	Leu	Pro	Gly	His	Asn	Asn	
			75					80					85			
tgc	aac	ccc	ctg	acg	aaa	gag	agc	atc	cgg	cag	aag	gag	atg	gag	agc	521
Cys	Asn	Pro	Leu	Thr	Lys	Glu	Ser	Ile	Arg	Gln	Lys	Glu	Met	Glu	Ser	
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Lys	Arg	Leu	Arg	Leu	Leu	Gln	Glu	Glu	Asp	Arg	Arg	Lys	Lys	Ile	Ala	
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Arg	Met	Gly	Phe	Asn	Ala	Ser	Ser	Met	Leu	Arg	Lys	Ser	Gln	Leu	Gly	
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Phe	Leu	Asn	Val	Thr	Asn	Tyr	Cys	His	Leu	Ala	His	Glu	Leu	Arg	Leu	
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Ser	Cys	Met	Glu	Arg	Lys	Lys	Val	Gln	Ile	Arg	Ser	Met	Asp	Pro	Ser	
			155					160					165			
gcc	ttg	gca	agc	gac	cga	ttt	aac	ctc	ata	ctg	gca	gat	acc	aac	agt	761
Ala	Leu	Ala	Ser	Asp	Arg	Phe	Asn	Leu	Ile	Leu	Ala	Asp	Thr	Asn	Ser	
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Asp	Arg	Leu	Phe	Thr	Val	Asn	Asp	Val	Thr	Val	Gly	Gly	Ser	Lys	Tyr	
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Trp	Ala	Ser	Leu	Asn	His	Leu	Asp	Ser	His	Ile	Leu	Leu	Cys	Leu	Met	
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Leu	Ala	Gln	Gln	Phe	Ala	Phe	Met	Ala	Pro	Leu	Leu	Phe	Asn	Gly	Cys	
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Tyr	Glu	Gly	His	Val	Asn	Glu	Tyr	Ala	Tyr	Leu	Pro	Leu	His	Val	His	
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Pro Glu Arg Cys Asn Phe Thr Leu Ala Glu Ser Lys Ala Ser Ser His
      25             30             35

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Ser Val Ser Ile Gln Trp Arg Ile Leu Gly Ser Pro Cys Asn Phe Ser
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Leu Ile Tyr Ser Ser Asp Thr Leu Gly Ala Ala Leu Cys Pro Thr Phe
      60             65             70

cgg ata gac aac acc aca tac gga tgt aac ctt caa gat tta caa gca      291
Arg Ile Asp Asn Thr Thr Tyr Gly Cys Asn Leu Gln Asp Leu Gln Ala
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gga acc atc tat aac ttc aag att att tct ctg gat gaa gag aga act      339
Gly Thr Ile Tyr Asn Phe Lys Ile Ile Ser Leu Asp Glu Glu Arg Thr
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Val Asp Lys His Ala Thr Ser Tyr Ala Phe His Gly Leu Ser Pro Gly			
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Tyr Leu Tyr Asn Leu Thr Val Met Thr Glu Ala Ala Gly Leu Gln Asn			
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tac agg tgg aaa cta gtc agg aca gcc ccc atg gaa gtc tca aat ctg			915
Tyr Arg Trp Lys Leu Val Arg Thr Ala Pro Met Glu Val Ser Asn Leu			
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Lys Val Thr Asn Asp Gly Ser Leu Thr Ser Leu Lys Val Lys Trp Gln			
	300	305	310
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Arg Pro Pro Gly Asn Val Asp Ser Tyr Asn Ile Thr Leu Ser His Lys			
	315	320	325
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Gly Thr Ile Lys Glu Ser Arg Val Leu Ala Pro Trp Ile Thr Glu Thr			
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His Phe Lys Glu Leu Val Pro Gly Arg Leu Tyr Gln Val Thr Val Ser			
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Arg Ser Leu Val Val Ser Trp Ser Pro Pro Ala Gly Asp Trp Glu Gln				
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	460	465	470	
cag ctt cgt gtc aaa cat gcc aat gaa acc tca ctg agt atc atg tgg				1491
Gln Leu Arg Val Lys His Ala Asn Glu Thr Ser Leu Ser Ile Met Trp				
	475	480	485	
cag acc cct gta gca gaa tgg gag aaa tac atc att tcc cta gct gac				1539
Gln Thr Pro Val Ala Glu Trp Glu Lys Tyr Ile Ile Ser Leu Ala Asp				
	490	495	500	
aga gac ctc tta ctg atc cac aag tca ctc tcc aaa gat gcc aaa gaa				1587
Arg Asp Leu Leu Leu Ile His Lys Ser Leu Ser Lys Asp Ala Lys Glu				
	505	510	515	
ttc act ttt act gac ctg gtg cct gga cga aaa tac atg gct aca gtc				1635
Phe Thr Phe Thr Asp Leu Val Pro Gly Arg Lys Tyr Met Ala Thr Val				
	520	525	530	535
acc agt att agt gga gac tta aaa aat tcc tct tca gta aaa gga aga				1683
Thr Ser Ile Ser Gly Asp Leu Lys Asn Ser Ser Ser Val Lys Gly Arg				
	540	545	550	
aca gtg cct gcc caa gtg act gac ttg cat gtg gcc aac caa gga atg				1731
Thr Val Pro Ala Gln Val Thr Asp Leu His Val Ala Asn Gln Gly Met				
	555	560	565	
acc agt agt ctg ttt act aac tgg acc cag gca caa gga gac gta gaa				1779
Thr Ser Ser Leu Phe Thr Asn Trp Thr Gln Ala Gln Gly Asp Val Glu				
	570	575	580	
ttt tac caa gtc tta ctg atc cat gaa aat gtg gtc att aaa aat gaa				1827
Phe Tyr Gln Val Leu Leu Ile His Glu Asn Val Val Ile Lys Asn Glu				
	585	590	595	
agc atc tcc agt gag acc agc aga tac agc ttc cac tct ctc aag tcc				1875
Ser Ile Ser Ser Glu Thr Ser Arg Tyr Ser Phe His Ser Leu Lys Ser				
	600	605	610	615
ggc agc ctg tac tcc gtg gtg gta aca aca gtg agt gga ggg atc tct				1923
Gly Ser Leu Tyr Ser Val Val Val Thr Thr Val Ser Gly Gly Ile Ser				

620	625	630	
tcc cga caa gtg gtt gtg gag gga aga aca gtc cct tcc agt gtg agt Ser Arg Gln Val Val Val Glu Gly Arg Thr Val Pro Ser Ser Val Ser 635 640 645			1971
gga gta acg gtg aac aat tcc ggt cgt aat gac tac ctc agc gtt tcc Gly Val Thr Val Asn Asn Ser Gly Arg Asn Asp Tyr Leu Ser Val Ser 650 655 660			2019
tgg ctg ctg gcg ccc gga gat gtg gat aac tat gag gta aca ttg tct Trp Leu Leu Ala Pro Gly Asp Val Asp Asn Tyr Glu Val Thr Leu Ser 665 670 675			2067
cat gac ggc aag gtg gtt cag tcc ctt gtc att gcc aag tct gtc aga His Asp Gly Lys Val Val Gln Ser Leu Val Ile Ala Lys Ser Val Arg 680 685 690 695			2115
gaa tgt tcc ttc agc tcc ctc acc cca ggc cgc ctc tac acc gtg acc Glu Cys Ser Phe Ser Ser Leu Thr Pro Gly Arg Leu Tyr Thr Val Thr 700 705 710			2163
ata act aca agg agt ggc aag tat gaa aat cac tcc ttc agc caa gag Ile Thr Thr Arg Ser Gly Lys Tyr Glu Asn His Ser Phe Ser Gln Glu 715 720 725			2211
cgg aca gtg cct gac aaa gtc cag gga gtc agt gtt agc aac tca gcc Arg Thr Val Pro Asp Lys Val Gln Gly Val Ser Val Ser Asn Ser Ala 730 735 740			2259
agg agt gac tat tta agg gta tcc tgg gtg cat gcc act gga gac ttt Arg Ser Asp Tyr Leu Arg Val Ser Trp Val His Ala Thr Gly Asp Phe 745 750 755			2307
gat cac tat gaa gtc acc att aaa aac aaa aac aac ttc att caa act Asp His Tyr Glu Val Thr Ile Lys Asn Lys Asn Asn Phe Ile Gln Thr 760 765 770 775			2355
aaa agc att ccc aag tca gaa aac gaa tgt gta ttt gtt cag cta gtc Lys Ser Ile Pro Lys Ser Glu Asn Glu Cys Val Phe Val Gln Leu Val 780 785 790			2403
cct gga cgg ttg tac agt gtc act gtt act aca aaa agt gga caa tat Pro Gly Arg Leu Tyr Ser Val Thr Val Thr Thr Lys Ser Gly Gln Tyr 795 800 805			2451
gaa gcc aat gaa caa ggg aat ggg aga aca att cca gag cct gtt aag Glu Ala Asn Glu Gln Gly Asn Gly Arg Thr Ile Pro Glu Pro Val Lys 810 815 820			2499
gat cta aca ttg cgc aac agg agc act gag gac ttg cat gtg act tgg Asp Leu Thr Leu Arg Asn Arg Ser Thr Glu Asp Leu His Val Thr Trp 825 830 835			2547
tca gga gct aat ggg gat gtc gac caa tat gag atc cag ctg ctc ttc Ser Gly Ala Asn Gly Asp Val Asp Gln Tyr Glu Ile Gln Leu Leu Phe 840 845 850 855			2595
aat gac atg aaa gta ttt cct cct ttt cac ctt gta aat acc gca acc Asn Asp Met Lys Val Phe Pro Pro Phe His Leu Val Asn Thr Ala Thr 860 865 870			2643
gag tat cga ttt act tcc cta aca cca ggc cgc caa tac aaa att ctt Glu Tyr Arg Phe Thr Ser Leu Thr Pro Gly Arg Gln Tyr Lys Ile Leu 880 885 890			2691

875	880	885	
gtc ttg acg att agc ggg gat gta cag cag tca gcc ttc att gag ggc Val Leu Thr Ile Ser Gly Asp Val Gln Gln Ser Ala Phe Ile Glu Gly 890 895 900			2739
ttc aca gtt cct agt gct gtc aaa aat att cac att tct ccc aat gga Phe Thr Val Pro Ser Ala Val Lys Asn Ile His Ile Ser Pro Asn Gly 905 910 915			2787
gca aca gat agc ctg acg gtg aac tgg act cct ggt ggg gga gac gtt Ala Thr Asp Ser Leu Thr Val Asn Trp Thr Pro Gly Gly Gly Asp Val 920 925 930 935			2835
gat tcc tac acg gtg tct gca ttc agg cac agt caa aag gtt gac tct Asp Ser Tyr Thr Val Ser Ala Phe Arg His Ser Gln Lys Val Asp Ser 940 945 950			2883
cag act att ccc aag cac gtc ttt gag cac acg ttc cac aga ctg gag Gln Thr Ile Pro Lys His Val Phe Glu His Thr Phe His Arg Leu Glu 955 960 965			2931
gcc ggg gag cag tac cag atc atg att gcc tca gtc agc ggg tcc ctg Ala Gly Glu Gln Tyr Gln Ile Met Ile Ala Ser Val Ser Gly Ser Leu 970 975 980			2979
aag aat cag ata aat gtg gtt ggg cgg aca gtt cca gca tct gtc caa Lys Asn Gln Ile Asn Val Val Gly Arg Thr Val Pro Ala Ser Val Gln 985 990 995			3027
gga gta att gca gac aat gca tac agc agt tat tcc tta ata gta agt Gly Val Ile Ala Asp Asn Ala Tyr Ser Ser Tyr Ser Leu Ile Val Ser 1000 1005 1010 1015			3075
tgg caa aaa gct gct ggt gtg gca gaa aga tat gat atc ctg ctt cta Trp Gln Lys Ala Ala Gly Val Ala Glu Arg Tyr Asp Ile Leu Leu Leu 1020 1025 1030			3123
act gaa aat gga atc ctt ctg cgc aac aca tca gag cca gcc acc act Thr Glu Asn Gly Ile Leu Leu Arg Asn Thr Ser Glu Pro Ala Thr Thr 1035 1040 1045			3171
aag caa cac aaa ttt gaa gat cta aca cca ggc aag aaa tac aag ata Lys Gln His Lys Phe Glu Asp Leu Thr Pro Gly Lys Lys Tyr Lys Ile 1050 1055 1060			3219
cag atc cta act gtc agt gga ggc ctc ttt agc aag gaa gcc cag act Gln Ile Leu Thr Val Ser Gly Gly Leu Phe Ser Lys Glu Ala Gln Thr 1065 1070 1075			3267
gaa ggc cga aca gtc cca gca gct gtc acc gac ctg agg atc aca gag Glu Gly Arg Thr Val Pro Ala Ala Val Thr Asp Leu Arg Ile Thr Glu 1080 1085 1090 1095			3315
aac tcc acc agg cac ctg tcc ttc cgc tgg acc gcc tca gag ggg gag Asn Ser Thr Arg His Leu Ser Phe Arg Trp Thr Ala Ser Glu Gly Glu 1100 1105 1110			3363
ctc agc tgg tac aac atc ttt ttg tac aac cca gat ggg aat ctc cag Leu Ser Trp Tyr Asn Ile Phe Leu Tyr Asn Pro Asp Gly Asn Leu Gln 1115 1120 1125			3411
gag aga gct caa gtt gac cca cta gtc cag agc ttc tct ttc cag aac Glu Arg Ala Gln Val Asp Pro Leu Val Gln Ser Phe Ser Phe Gln Asn			3459

1130	1135	1140	
ttg cta caa ggc aga atg tac aag atg gtg att gta act cac agt ggg Leu Leu Gln Gly Arg Met Tyr Lys Met Val Ile Val Thr His Ser Gly 1145 1150 1155			3507
gag ctg tct aat gag tct ttc ata ttt ggt aga aca gtc cca gcc tct Glu Leu Ser Asn Glu Ser Phe Ile Phe Gly Arg Thr Val Pro Ala Ser 1160 1165 1170 1175			3555
gtg agt cat ctc agg ggg tcc aat cgg aac acg aca gac agc ctt tgg Val Ser His Leu Arg Gly Ser Asn Arg Asn Thr Thr Asp Ser Leu Trp 1180 1185 1190			3603
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att gca aac aca tcc ttg gcc atc acg tgg aaa ggg ccc cca gac tgg Ile Ala Asn Thr Ser Leu Ala Ile Thr Trp Lys Gly Pro Pro Asp Trp 1275 1280 1285			3891
aca gac tac aac gac ttt gag ctg cag tgg ttg ccc aga gat gca ctt Thr Asp Tyr Asn Asp Phe Glu Leu Gln Trp Leu Pro Arg Asp Ala Leu 1290 1295 1300			3939
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tat ggt ctt cgt cca ggg aga tcc tat caa ttc aac gtc aag act gtc Tyr Gly Leu Arg Pro Gly Arg Ser Tyr Gln Phe Asn Val Lys Thr Val 1320 1325 1330 1335			4035
agt ggt gat tcc tgg aaa act tac agc aaa cca att ttt gga tct gtg Ser Gly Asp Ser Trp Lys Thr Tyr Ser Lys Pro Ile Phe Gly Ser Val 1340 1345 1350			4083
agg aca aag cct gac aag ata caa aac ctg cat tgc cgg cct cag aac Arg Thr Lys Pro Asp Lys Ile Gln Asn Leu His Cys Arg Pro Gln Asn 1355 1360 1365			4131
tcc acg gcc att gcc tgt tct tgg atc cct cct gat tct gac ttt gat Ser Thr Ala Ile Ala Cys Ser Trp Ile Pro Pro Asp Ser Asp Phe Asp 1370 1375 1380			4179
ggt tat agt att gaa tgc cgg aaa atg gac acc caa gaa gtt gag ttt Gly Tyr Ser Ile Glu Cys Arg Lys Met Asp Thr Gln Glu Val Glu Phe			4227

1385	1390	1395	
tcc aga aag ctg gag aaa gaa aaa tct ctg ctc aac atc atg atg cta			4275
Ser Arg Lys Leu Glu Lys Glu Lys Ser Leu Leu Asn Ile Met Met Leu			
1400	1405	1410	1415
gtg ccc cat aag agg tac ctg gtg tcc atc aaa gtg cag tcg gcc ggc			4323
Val Pro His Lys Arg Tyr Leu Val Ser Ile Lys Val Gln Ser Ala Gly			
	1420	1425	1430
atg acc agc gag gtg gtt gaa gac agc act atc aca atg ata gac cgc			4371
Met Thr Ser Glu Val Val Glu Asp Ser Thr Ile Thr Met Ile Asp Arg			
	1435	1440	1445
ccc cct cct cca ccc cca cac att cgt gtg aat gaa aag gat gtg cta			4419
Pro Pro Pro Pro Pro Pro His Ile Arg Val Asn Glu Lys Asp Val Leu			
	1450	1455	1460
att agc aag tct tcc atc aac ttt act gtc aac tgc agc tgg ttc agc			4467
Ile Ser Lys Ser Ser Ile Asn Phe Thr Val Asn Cys Ser Trp Phe Ser			
	1465	1470	1475
gac acc aat gga gct gtg aaa tac ttc aca gtg gtg gtg aga gag gct			4515
Asp Thr Asn Gly Ala Val Lys Tyr Phe Thr Val Val Val Arg Glu Ala			
1480	1485	1490	1495
gat ggc agt gat gag ctg aag cca gaa cag cag cac cct ctc cct tcc			4563
Asp Gly Ser Asp Glu Leu Lys Pro Glu Gln Gln His Pro Leu Pro Ser			
	1500	1505	1510
tac ctg gag tac agg cac aat gcc tcc att cgg gtg tat cag act aat			4611
Tyr Leu Glu Tyr Arg His Asn Ala Ser Ile Arg Val Tyr Gln Thr Asn			
	1515	1520	1525
tat ttt gcc agc aaa tgt gcc gaa aat cct aac agc aac tcc aag agt			4659
Tyr Phe Ala Ser Lys Cys Ala Glu Asn Pro Asn Ser Asn Ser Lys Ser			
	1530	1535	1540
ttt aac att aag ctt gga gca gag atg gag agc cta ggt gga aaa tgc			4707
Phe Asn Ile Lys Leu Gly Ala Glu Met Glu Ser Leu Gly Gly Lys Cys			
	1545	1550	1555
gat ccc act cag caa aaa ttc tgt gat gga cca ctg aag cca cac act			4755
Asp Pro Thr Gln Gln Lys Phe Cys Asp Gly Pro Leu Lys Pro His Thr			
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gcc tac aga atc agc att cga gct ttt aca cag ctc ttt gat gag gac			4803
Ala Tyr Arg Ile Ser Ile Arg Ala Phe Thr Gln Leu Phe Asp Glu Asp			
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Leu Lys Glu Phe Thr Lys Pro Leu Tyr Ser Asp Thr Phe Phe Ser Leu			
	1595	1600	1605
ccc atc act act gaa tca gag ccc ttg ttt gga gct att gaa ggt gtg			4899
Pro Ile Thr Thr Glu Ser Glu Pro Leu Phe Gly Ala Ile Glu Gly Val			
	1610	1615	1620
agt gct ggt ctg ttt tta att ggc atg cta gtg gct gtt gtt gcc tta			4947
Ser Ala Gly Leu Phe Leu Ile Gly Met Leu Val Ala Val Val Ala Leu			
	1625	1630	1635
ttg atc tgc aga cag aaa gtg agc cat ggt cga gaa aga ccc tct gcc			4995
Leu Ile Cys Arg Gln Lys Val Ser His Gly Arg Glu Arg Pro Ser Ala			

1640	1645	1650	1655	
cgt ctg agc att cgt agg gat cga cca tta tct gtc cac tta aac ctg				5043
Arg Leu Ser Ile Arg Arg Asp Arg Pro Leu Ser Val His Leu Asn Leu				
1660		1665	1670	
ggc cag aaa ggt aac cgg aaa act tct tgt cca ata aaa ata aat cag				5091
Gly Gln Lys Gly Asn Arg Lys Thr Ser Cys Pro Ile Lys Ile Asn Gln				
1675	1680		1685	
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Phe Glu Gly His Phe Met Lys Leu Gln Ala Asp Ser Asn Tyr Leu Leu				
1690	1695		1700	
tcc aag gaa tac gag gag tta aaa gac gtg ggc cga aac cag tca tgt				5187
Ser Lys Glu Tyr Glu Glu Leu Lys Asp Val Gly Arg Asn Gln Ser Cys				
1705	1710		1715	
gac att gca ctc ttg ccg gag aat aga ggg aaa aat cga tac aac aat				5235
Asp Ile Ala Leu Leu Pro Glu Asn Arg Gly Lys Asn Arg Tyr Asn Asn				
1720	1725	1730	1735	
ata ttg ccc tat gat gcc acg cga gtg aag ctc tcc aat gta gat gat				5283
Ile Leu Pro Tyr Asp Ala Thr Arg Val Lys Leu Ser Asn Val Asp Asp				
1740	1745		1750	
gat cct tgc tct gac tac atc aat gcc agc tac atc cct ggc aac aac				5331
Asp Pro Cys Ser Asp Tyr Ile Asn Ala Ser Tyr Ile Pro Gly Asn Asn				
1755	1760		1765	
ttc aga aga gaa tac att gtc act cag gga ccg ctt cct ggc acc aag				5379
Phe Arg Arg Glu Tyr Ile Val Thr Gln Gly Pro Leu Pro Gly Thr Lys				
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gat gac ttc tgg aaa atg gtg tgg gaa caa aac gtt cac aac atc gtc				5427
Asp Asp Phe Trp Lys Met Val Trp Glu Gln Asn Val His Asn Ile Val				
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atg gtg acc cag tgt gtt gag aag ggc cga gta aag tgt gac cat tac				5475
Met Val Thr Gln Cys Val Glu Lys Gly Arg Val Lys Cys Asp His Tyr				
1800	1805	1810	1815	
tgg cca gcg gac cag gat tcc ctc tac tat ggg gac ctc atc ctg cag				5523
Trp Pro Ala Asp Gln Asp Ser Leu Tyr Tyr Gly Asp Leu Ile Leu Gln				
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Met Leu Ser Glu Ser Val Leu Pro Glu Trp Thr Ile Arg Glu Phe Lys				
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ata tgc ggt gag gaa cag ctt gat gca cac aga ctc atc cgc cac ttt				5619
Ile Cys Gly Glu Glu Gln Leu Asp Ala His Arg Leu Ile Arg His Phe				
1850	1855		1860	
cac tat acg gtg tgg cca gac cat gga gtc cca gaa acc acc cag tct				5667
His Tyr Thr Val Trp Pro Asp His Gly Val Pro Glu Thr Thr Gln Ser				
1865	1870		1875	
ctg atc cag ttt gtg aga act gtc agg gac tac atc aac aga agc ccg				5715
Leu Ile Gln Phe Val Arg Thr Val Arg Asp Tyr Ile Asn Arg Ser Pro				
1880	1885	1890	1895	
ggg gct ggg ccc act gtg gtg cac tgc agt gct ggt gtg ggt agg act				5763
Gly Ala Gly Pro Thr Val Val His Cys Ser Ala Gly Val Gly Arg Thr				

	1900	1905	1910	
gga acc ttt att gca ttg gac cga atc ctc cag cag tta gac tcc aaa				5811
Gly Thr Phe Ile Ala Leu Asp Arg Ile Leu Gln Gln Leu Asp Ser Lys				
	1915	1920	1925	
gac tct gtg gac att tat gga gca gtg cac gac cta aga ctt cac agg				5859
Asp Ser Val Asp Ile Tyr Gly Ala Val His Asp Leu Arg Leu His Arg				
	1930	1935	1940	
gtt cac atg gtc cag act gag tgt cag tat gtc tac cta cat cag tgt				5907
Val His Met Val Gln Thr Glu Cys Gln Tyr Val Tyr Leu His Gln Cys				
	1945	1950	1955	
gta aga gat gtc ctc aga gca aga aag cta cgg agt gaa caa gaa aac				5955
Val Arg Asp Val Leu Arg Ala Arg Lys Leu Arg Ser Glu Gln Glu Asn				
1960	1965	1970	1975	
ccc ttg ttt cca atc tat gaa aat gtg aat cca gag tat cac aga gat				6003
Pro Leu Phe Pro Ile Tyr Glu Asn Val Asn Pro Glu Tyr His Arg Asp				
	1980	1985	1990	
cca gtc tat tca agg cat tga ga atgtacctga agagctcctg gataaaaatt				6056
Pro Val Tyr Ser Arg His *				
	1995			
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tctgttgata ctatgtataa tttattaatc tggagaatgt ttaaaatttt atataattta				6176
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<220>
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gaacatgaag agatgcatcc ataaatccca ctagcaataa tgtgctcctc tgatcttagt	180
gatattcact tttaagtgat gccaataact attgtaataa tgctgtattt atgacagcat	240
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Met Ala Ala Gln Tyr Gly Ser Met
1 5.

agc ttc aac ccc agc aca cca ggg gcc agt tat ggg cct gga agg caa	520
Ser Phe Asn Pro Ser Thr Pro Gly Ala Ser Tyr Gly Pro Gly Arg Gln	
10 15 20	
gag ccc aga aat tcc caa ttg aga att gtg tta gtg ggt aaa acc gga	568
Glu Pro Arg Asn Ser Gln Leu Arg Ile Val Leu Val Gly Lys Thr Gly	
25 30 35 40	
gca gga aaa agt gca aca gga aac agc atc ctt ggc cgg aaa gtg ttt	616
Ala Gly Lys Ser Ala Thr Gly Asn Ser Ile Leu Gly Arg Lys Val Phe	
45 50 55	
cat tct ggc act gca gca aaa tcc att acc aag aag tgt gag aaa cgc	664
His Ser Gly Thr Ala Ala Lys Ser Ile Thr Lys Lys Cys Glu Lys Arg	
60 65 70	
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Ser Ser Ser Trp Lys Glu Thr Glu Leu Val Val Val Asp Thr Pro Gly	
75 80 85	
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Ile Phe Asp Thr Glu Val Pro Asn Ala Glu Thr Ser Lys Glu Ile Ile	
90 95 100	
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Arg Cys Ile Leu Leu Thr Ser Pro Gly Pro His Ala Leu Leu Leu Val	
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Val Pro Leu Gly Arg Tyr Thr Glu Glu Glu His Lys Ala Thr Glu Lys	
125 130 135	
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Ile Leu Lys Met Phe Gly Glu Arg Ala Arg Ser Phe Met Ile Leu Ile	
140 145 150	
ttc acc cgg aaa gat gac tta ggt gac acc aat ttg cat gac tac tta	952
Phe Thr Arg Lys Asp Asp Leu Gly Asp Thr Asn Leu His Asp Tyr Leu	
155 160 165	
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Arg Glu Ala Pro Glu Asp Ile Gln Asp Leu Met Asp Ile Phe Gly Asp	
170 175 180	
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Arg Tyr Cys Ala Leu Asn Asn Lys Ala Thr Gly Ala Glu Gln Glu Ala	
185 190 195 200	
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Gln Arg Ala Gln Leu Leu Gly Leu Ile Gln Arg Val Val Arg Glu Asn	
205 210 215	
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Lys Glu Gly Cys Tyr Thr Asn Arg Met Tyr Gln Arg Ala Glu Glu Glu	
220 225 230	
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Ile Gln Lys Gln Thr Gln Ala Met Gln Glu Leu His Arg Val Glu Leu	
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Glu Arg Glu Lys Ala Arg Ile Arg Glu Glu Tyr Glu Glu Lys Ile Arg
 250 255 260

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 265 270 275 280

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 285 290 295

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 Ala Arg Thr Glu Val Glu Ser Lys Asp Gly Ile Leu Glu Leu Ile Met
 300 305 310

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 315 320 325

gat taa acttaatgaa aatctgtttg tattttctgc atattctctg gcaaccttg 1488
 Asp *
 330

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 tgactgtgga atccttaagg gccattaca tttctgaaga agaaagctaa gatgaaggac 240
 atg cca ctc cga att cat gtg cta ctt ggc cta gct atc act aca cta 288
 Met Pro Leu Arg Ile His Val Leu Leu Gly Leu Ala Ile Thr Thr Leu
 1 5 10 15

gta caa gct gta gat aaa aaa gtg gat tgt cca cgg tta tgt acg tgt 336
 Val Gln Ala Val Asp Lys Lys Val Asp Cys Pro Arg Leu Cys Thr Cys

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gaa atc agg cct tgg ttt aca ccc aga tcc att tat atg gaa gca tct				384
Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser Ile Tyr Met Glu Ala Ser				
	35	40	45	
aca gtg gat tgt aat gat tta ggt ctt tta act ttc cca gcc aga ttg				432
Thr Val Asp Cys Asn Asp Leu Gly Leu Leu Thr Phe Pro Ala Arg Leu				
	50	55	60	
cca gct aac aca cag att ctt ctc cta cag act aac aat att gca aaa				480
Pro Ala Asn Thr Gln Ile Leu Leu Leu Gln Thr Asn Asn Ile Ala Lys				
	65	70	75	80
att gaa tac tcc aca gac ttt cca gta aac ctt act ggc ctg gat tta				528
Ile Glu Tyr Ser Thr Asp Phe Pro Val Asn Leu Thr Gly Leu Asp Leu				
	85	90	95	
tct caa aac aat tta tct tca gtc acc aat att aat gta aaa aag atg				576
Ser Gln Asn Asn Leu Ser Ser Val Thr Asn Ile Asn Val Lys Lys Met				
	100	105	110	
cct cag ctc ctt tct gtg tac cta gag gaa aac aaa ctt act gaa ctg				624
Pro Gln Leu Leu Ser Val Tyr Leu Glu Glu Asn Lys Leu Thr Glu Leu				
	115	120	125	
cct gaa aaa tgt ctg tcc gaa ctg agc aac tta caa gaa ctc tat att				672
Pro Glu Lys Cys Leu Ser Glu Leu Ser Asn Leu Gln Glu Leu Tyr Ile				
	130	135	140	
aat cac aac ttg ctt tct aca att tca cct gga gcc ttt att ggc cta				720
Asn His Asn Leu Leu Ser Thr Ile Ser Pro Gly Ala Phe Ile Gly Leu				
	145	150	155	160
cat aat ctt ctt cga ctt cat ctc aat tca aat aga ttg cag atg atc				768
His Asn Leu Leu Arg Leu His Leu Asn Ser Asn Arg Leu Gln Met Ile				
	165	170	175	
aac agt aag tgg ttt gat gct ctt cca aat cta gag att ctg atg att				816
Asn Ser Lys Trp Phe Asp Ala Leu Pro Asn Leu Glu Ile Leu Met Ile				
	180	185	190	
ggg gaa aat cca att atc aga atc aaa gac atg aac ttt aag cct ctt				864
Gly Glu Asn Pro Ile Ile Arg Ile Lys Asp Met Asn Phe Lys Pro Leu				
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atc aat ctt cgc agc ctg gtt ata gct ggt ata aac ctc aca gaa ata				912
Ile Asn Leu Arg Ser Leu Val Ile Ala Gly Ile Asn Leu Thr Glu Ile				
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cca gat aac gcc ttg gtt gga ctg gaa aac tta gaa agc atc tct ttt				960
Pro Asp Asn Ala Leu Val Gly Leu Glu Asn Leu Glu Ser Ile Ser Phe				
	225	230	235	240
tac gat aac agg ctt att aaa gta ccc cat gtt gct ctt caa aaa gtt				1008
Tyr Asp Asn Arg Leu Ile Lys Val Pro His Val Ala Leu Gln Lys Val				
	245	250	255	
gta aat ctc aaa ttt ttg gat cta aat aaa aat cct att aat aga ata				1056
Val Asn Leu Lys Phe Leu Asp Leu Asn Lys Asn Pro Ile Asn Arg Ile				
	260	265	270	
cga agg ggt gat ttt agc aat atg cta cac tta aaa gag ttg ggg ata				1104
Arg Arg Gly Asp Phe Ser Asn Met Leu His Leu Lys Glu Leu Gly Ile				

275	280	285	
aat aat atg cct gag ctg att tcc atc gat agt ctt gct gtg gat aac Asn Asn Met Pro Glu Leu Ile Ser Ile Asp Ser Leu Ala Val Asp Asn 290 295 300			1152
ctg cca gat tta aga aaa ata gaa gct act aac aac cct aga ttg tct Leu Pro Asp Leu Arg Lys Ile Glu Ala Thr Asn Asn Pro Arg Leu Ser 305 310 315 320			1200
tac att cac ccc aat gca ttt ttc aga ctc ccc aag ctg gaa tca ctc Tyr Ile His Pro Asn Ala Phe Phe Arg Leu Pro Lys Leu Glu Ser Leu 325 330 335			1248
atg ctg aac agc aat gct ctc agt gcc ctg tac cat ggt acc att gag Met Leu Asn Ser Asn Ala Leu Ser Ala Leu Tyr His Gly Thr Ile Glu 340 345 350			1296
tct ctg cca aac ctc aag gaa atc agc ata cac agt aac ccc atc agg Ser Leu Pro Asn Leu Lys Glu Ile Ser Ile His Ser Asn Pro Ile Arg 355 360 365			1344
tgt gac tgt gtc atc cgt tgg atg aac atg aac aaa acc aac att cga Cys Asp Cys Val Ile Arg Trp Met Asn Met Asn Lys Thr Asn Ile Arg 370 375 380			1392
ttc atg gag cca gat tca ctg ttt tgc gtg gac cca cct gaa ttc caa Phe Met Glu Pro Asp Ser Leu Phe Cys Val Asp Pro Pro Glu Phe Gln 385 390 395 400			1440
ggt cag aat gtt cgg caa gtg cat ttc agg gac atg atg gaa att tgt Gly Gln Asn Val Arg Gln Val His Phe Arg Asp Met Met Glu Ile Cys 405 410 415			1488
ctc cct ctt ata gct cct gag agc ttt cct tct aat cta aat gta gaa Leu Pro Leu Ile Ala Pro Glu Ser Phe Pro Ser Asn Leu Asn Val Glu 420 425 430			1536
gct ggg agc tat gtt tcc ttt cac tgt aga gct act gca gaa cca cag Ala Gly Ser Tyr Val Ser Phe His Cys Arg Ala Thr Ala Glu Pro Gln 435 440 445			1584
cct gaa atc tac tgg ata aca cct tct ggt caa aaa ctc ttg cct aat Pro Glu Ile Tyr Trp Ile Thr Pro Ser Gly Gln Lys Leu Leu Pro Asn 450 455 460			1632
acc ctg aca gac aag ttc tat gtc cat tct gag gga aca cta gat ata Thr Leu Thr Asp Lys Phe Tyr Val His Ser Glu Gly Thr Leu Asp Ile 465 470 475 480			1680
aat ggc gta act ccc aaa gaa ggg ggt tta tat act tgt ata gca act Asn Gly Val Thr Pro Lys Glu Gly Gly Leu Tyr Thr Cys Ile Ala Thr 485 490 495			1728
aac cta gtt ggc gct gac ttg aag tct gtt atg atc aaa gtg gat gga Asn Leu Val Gly Ala Asp Leu Lys Ser Val Met Ile Lys Val Asp Gly 500 505 510			1776
tct ttt cca caa gat aac aat ggc tct ttg aat att aaa ata aga gat Ser Phe Pro Gln Asp Asn Asn Gly Ser Leu Asn Ile Lys Ile Arg Asp 515 520 525			1824
att cag gcc aat tca gtt ttg gtg tcc tgg aaa gca agt tct aaa att Ile Gln Ala Asn Ser Val Leu Val Ser Trp Lys Ala Ser Ser Lys Ile 530 535 540			1872

530	535	540	
ctc aaa tct agt gtt aaa tgg aca gcc ttt gtc aag act gaa aat tct			1920
Leu Lys Ser Ser Val Lys Trp Thr Ala Phe Val Lys Thr Glu Asn Ser			
545	550	555	560
cat gct gcg caa agt gct cga ata cca tct gat gtc aag gta tat aat			1968
His Ala Ala Gln Ser Ala Arg Ile Pro Ser Asp Val Lys Val Tyr Asn			
	565	570	575
ctt act cat ctg aat cca tca act gag tat aaa att tgt att gat att			2016
Leu Thr His Leu Asn Pro Ser Thr Glu Tyr Lys Ile Cys Ile Asp Ile			
	580	585	590
ccc acc atc tat cag aaa aac aga aaa aaa tgt gta aat gtc acc acc			2064
Pro Thr Ile Tyr Gln Lys Asn Arg Lys Lys Cys Val Asn Val Thr Thr			
	595	600	605
aaa ggt ttg cac cct gat caa aaa gag tat gaa aag aat aat acc aca			2112
Lys Gly Leu His Pro Asp Gln Lys Glu Tyr Glu Lys Asn Asn Thr Thr			
	610	615	620
aca ctt atg gcc tgt ctt gga ggc ctt ctg ggg att att ggt gtg ata			2160
Thr Leu Met Ala Cys Leu Gly Gly Leu Leu Gly Ile Ile Gly Val Ile			
	625	630	635
tgt ctt atc agc tgc ctc tct cca gaa atg aac tgt gat ggt gga cac			2208
Cys Leu Ile Ser Cys Leu Ser Pro Glu Met Asn Cys Asp Gly Gly His			
	645	650	655
agc tat gtg agg aat tac tta cag aaa cca acc ttt gca tta ggt gag			2256
Ser Tyr Val Arg Asn Tyr Leu Gln Lys Pro Thr Phe Ala Leu Gly Glu			
	660	665	670
ctt tat cct cct ctg ata aat ctc tgg gaa gca gga aaa gaa aaa agt			2304
Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Ala Gly Lys Glu Lys Ser			
	675	680	685
aca tca ctg aaa gta aaa gca act gtt ata ggt tta cca aca aat atg			2352
Thr Ser Leu Lys Val Lys Ala Thr Val Ile Gly Leu Pro Thr Asn Met			
	690	695	700
tcc taa aaaccaccaa ggaaacctac tccaaaaatg aacaaaaaaa aaaaaagcga			2408
Ser *			
705			
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tgtgattgag aaaggtatct ttttgccaca tacgttgctc cttctgccac tcttgacatt	180
ggactccaac aggaaaagaa aaaagaaatt tat atg aaa ata cag cca cca ttt	234
Met Lys Ile Gln Pro Pro Phe	
1 5	
gaa gac ctt ttt gac aca gca gag gaa tat atc ctt ctc ctc ctt ctt	282
Glu Asp Leu Phe Asp Thr Ala Glu Glu Tyr Ile Leu Leu Leu Leu Leu	
10 15 20	
gag cca tgg aca aag atg gta aaa tcg gac caa att gct tat aaa aag	330
Glu Pro Trp Thr Lys Met Val Lys Ser Asp Gln Ile Ala Tyr Lys Lys	
25 30 35	
gtg gag ctg gtg gaa gaa act cga cag tta gac tcc aca tac ttc aga	378
Val Glu Leu Val Glu Glu Thr Arg Gln Leu Asp Ser Thr Tyr Phe Arg	
40 45 50 55	
aag cta cag gct ttg cat aaa gag aca ttt tcc aag aaa gct gag gac	426
Lys Leu Gln Ala Leu His Lys Glu Thr Phe Ser Lys Lys Ala Glu Asp	
60 65 70	
acc act tgt gaa att gga act ggc att tta tca ctc tct aac gtc tct	474
Thr Thr Cys Glu Ile Gly Thr Gly Ile Leu Ser Leu Ser Asn Val Ser	
75 80 85	
aaa cga aca gaa tat tgg gat aat gtt cct gca gaa tac aag cat ttt	522
Lys Arg Thr Glu Tyr Trp Asp Asn Val Pro Ala Glu Tyr Lys His Phe	
90 95 100	
aag ttt agt gat ctg ctt aac aac aaa ctg gag ttt gaa cat ttc cgt	570
Lys Phe Ser Asp Leu Leu Asn Asn Lys Leu Glu Phe Glu His Phe Arg	
105 110 115	
cag ttt ctt gag act cat tct tca agc atg gat ctt atg tgc tgg aca	618
Gln Phe Leu Glu Thr His Ser Ser Ser Met Asp Leu Met Cys Trp Thr	
120 125 130 135	
gac att gag cag ttc cgg aga ata act tac aga gat cga aat caa agg	666
Asp Ile Glu Gln Phe Arg Arg Ile Thr Tyr Arg Asp Arg Asn Gln Arg	
140 145 150	
aag gca aaa tct ata tac att aaa aac aaa tac ctt aat aaa aaa tat	714
Lys Ala Lys Ser Ile Tyr Ile Lys Asn Lys Tyr Leu Asn Lys Lys Tyr	
155 160 165	
ttc ttt gga ccc aac agt cca gct tct ctg tat cag cag aac cag gta	762
Phe Phe Gly Pro Asn Ser Pro Ala Ser Leu Tyr Gln Gln Asn Gln Val	
170 175 180	
atg cat tta agt ggt ggc tgg ggg aag att ctt cat gag cag ctt gat	810
Met His Leu Ser Gly Gly Trp Gly Lys Ile Leu His Glu Gln Leu Asp	
185 190 195	
gca cct gtt cta gtt gaa atc cag aag cat gtg caa aat agg cta gaa	858
Ala Pro Val Leu Val Glu Ile Gln Lys His Val Gln Asn Arg Leu Glu	
200 205 210 215	
aat gta tgg ctg cca ttg ttt ctt gca agt gaa cag ttt gca gca cgt	906
Asn Val Trp Leu Pro Leu Phe Leu Ala Ser Glu Gln Phe Ala Ala Arg	
220 225 230	
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Gln Lys Ile	Lys Val Gln Met Lys Asp Ile Ala Glu Glu Leu Leu Leu	
235	240	245
cag aag gct gaa aag aaa atc ggg gtc tgg aag cct gtg gag agt aag		1002
Gln Lys Ala Glu Lys Lys Ile Gly Val Trp Lys Pro Val Glu Ser Lys		
250	255	260
tgg atc tct tca tct tgt aaa atc att gct ttt cgc aaa gca tta ttg		1050
Trp Ile Ser Ser Ser Cys Lys Ile Ile Ala Phe Arg Lys Ala Leu Leu		
265	270	275
aat cca gtt act tca aga caa ttt caa cgt ttt gtg gct cta aaa gga		1098
Asn Pro Val Thr Ser Arg Gln Phe Gln Arg Phe Val Ala Leu Lys Gly		
280	285	290
gat tta ttg gaa aat ggt tta ctc ttt tgg caa gaa gta caa aaa tat		1146
Asp Leu Leu Glu Asn Gly Leu Leu Phe Trp Gln Glu Val Gln Lys Tyr		
300	305	310
aag gac ttg tgc cat tct cat tgt gat gag tct gtc atc cag aag aag		1194
Lys Asp Leu Cys His Ser His Cys Asp Glu Ser Val Ile Gln Lys Lys		
315	320	325
att aca act att atc aac tgc ttt att aat tcc agt att cca cca gct		1242
Ile Thr Thr Ile Ile Asn Cys Phe Ile Asn Ser Ser Ile Pro Pro Ala		
330	335	340
tta caa att gac att cca gta gag caa gcc cag aag att att gaa cac		1290
Leu Gln Ile Asp Ile Pro Val Glu Gln Ala Gln Lys Ile Ile Glu His		
345	350	355
cgg aag gag tta gga cca tat gta ttt aga gag gca cag atg aca att		1338
Arg Lys Glu Leu Gly Pro Tyr Val Phe Arg Glu Ala Gln Met Thr Ile		
360	365	370
ttt ggg gtt ctg ttt aaa ttc tgg cct cag ttc tgt gag ttt agg aag		1386
Phe Gly Val Leu Phe Lys Phe Trp Pro Gln Phe Cys Glu Phe Arg Lys		
380	385	390
aat tta aca gat gaa aat att atg agt gtt tta gag aga aga caa gaa		1434
Asn Leu Thr Asp Glu Asn Ile Met Ser Val Leu Glu Arg Arg Gln Glu		
395	400	405
tat aat aag cag aaa aaa aaa ttg gca gtc cta gaa gac gaa aaa tct		1482
Tyr Asn Lys Gln Lys Lys Lys Leu Ala Val Leu Glu Asp Glu Lys Ser		
410	415	420
gga aag gat gga atc aaa caa tat gca aat act tca gtg cct gct atc		1530
Gly Lys Asp Gly Ile Lys Gln Tyr Ala Asn Thr Ser Val Pro Ala Ile		
425	430	435
aaa act gct tta ctc agt gat tcc ttc cta ggc ctc caa cca tat ggc		1578
Lys Thr Ala Leu Leu Ser Asp Ser Phe Leu Gly Leu Gln Pro Tyr Gly		
440	445	450
cga cag cca acc tgg tgc tac tca aag tat ata gaa gcc tta gaa cag		1626
Arg Gln Pro Thr Trp Cys Tyr Ser Lys Tyr Ile Glu Ala Leu Glu Gln		
460	465	470
gag aga att ctt ctt aag atc caa gaa gaa cta gaa aaa aag ttg ttt		1674
Glu Arg Ile Leu Leu Lys Ile Gln Glu Glu Leu Glu Lys Lys Leu Phe		
475	480	485
gca ggc ttg caa cct ctc aca aat ttt aag gct agc tct tca act atg		1722

Ala Gly Leu Gln Pro Leu Thr Asn Phe Lys Ala Ser Ser Ser Thr Met
 490 495 500

tct ttg aaa aag aat atg tct gcc cac agc agc cag aag tga cagcatt 1771
 Ser Leu Lys Lys Asn Met Ser Ala His Ser Ser Gln Lys *
 505 510 515

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Val Lys Ser Pro Glu Lys Ala Lys Ser Pro Ala Lys Glu Glu Ala Lys	
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Ser Pro Val Lys Ala Glu Ala Lys Ser Pro Glu Lys Ala Lys Ser Pro	
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Thr Pro Glu Lys Ala Lys Ser Pro Val Lys Glu Glu Ala Lys Ser Pro	
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Glu Lys Ala Lys Ser Pro Glu Lys Ala Lys Thr Leu Asp Val Lys Ser	
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Lys Phe Pro Glu Lys Ala Lys Ser Pro Val Lys Glu Glu Val Lys Ser	
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870 875 880	
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aat att gac ccg ata acc atg gcc tac agt ctg aac tct tct gct cag      373
Asn Ile Asp Pro Ile Thr Met Ala Tyr Ser Leu Asn Ser Ser Ala Gln
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Glu Arg Leu Ile Pro Leu Gly His Ala Ser Lys Ser Ala Pro Met Asn
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cct ctt ctt att ccc cca agt gaa aac ttg gga cca cat gaa gag gat      517
Pro Leu Leu Ile Pro Pro Ser Glu Asn Leu Gly Pro His Glu Glu Asp
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Cys Ala Pro Leu Cys Glu Arg Gly Ser Arg Pro Leu Pro Pro Leu Pro
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Ile Ser Glu Ala Leu Ser Leu Asp Asp Thr Asp Cys Glu Val Glu Phe
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cta act agc tca gat aca gac ttc ctt tta gaa gac tct aca ctt tct      757
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Asp Phe Lys Tyr Asp Val Pro Gly Arg Arg Ser Phe Arg Gly Cys Gly
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Glu Phe Ile Ile Lys Pro Arg Ser His Thr Val Trp Glu Lys Glu Asn

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145	150	155	
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tgg tat aaa aac cag gtg cca ata aat gtc cat gca aac cct gga aag Trp Tyr Lys Asn Gln Val Pro Ile Asn Val His Ala Asn Pro Gly Lys 175 180 185			1236
tat att att gag agt cga tat gga atg cac act ctg gag att aat gca Tyr Ile Ile Glu Ser Arg Tyr Gly Met His Thr Leu Glu Ile Asn Ala 190 195 200 205			1284
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ctc agc ttt ggt gtg acc cca tat ggt tat gca tcc cgg ttt gag atc Leu Ser Phe Gly Val Thr Pro Tyr Gly Tyr Ala Ser Arg Phe Glu Ile 255 260 265			1476
cac ttt gat gac aaa ttt gat gtg tct ttt ggg aga gag gga gag aca His Phe Asp Asp Lys Phe Asp Val Ser Phe Gly Arg Glu Gly Glu Thr 270 275 280 285			1524
atg agt cta ggc tgt cgt gtt gtc atc act cct gaa att aaa cat ttc Met Ser Leu Gly Cys Arg Val Val Ile Thr Pro Glu Ile Lys His Phe 290 295 300			1572
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atg gga gaa tat tat gaa caa tat agt gct tat gtc ttt gtt cga gat Met Gly Glu Tyr Tyr Glu Gln Tyr Ser Ala Tyr Val Phe Val Arg Asp 350 355 360 365			1764
gct gat gca gag att gaa gga gcc cca gct gct ccc ttg gat gtg aag Ala Asp Ala Glu Ile Glu Gly Ala Pro Ala Ala Pro Leu Asp Val Lys 370 375 380			1812
tgc ttg gag gcc aac aaa gat tat atc atc atc tcc tgg aaa cag cca Cys Leu Glu Ala Asn Lys Asp Tyr Ile Ile Ile Ser Trp Lys Gln Pro 385 390 395			1860
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act gag gcc acc cgg agc tat gtg gtg ctc agc tgg aag ccc cct ggc Thr Glu Ala Thr Arg Ser Tyr Val Val Leu Ser Trp Lys Pro Pro Gly 510 515 520 525			2244
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ccc cgc ttt gct ctg ttt gac ttg gcc gag ggg aaa tcc tac tgt ttc Pro Arg Phe Ala Leu Phe Asp Leu Ala Glu Gly Lys Ser Tyr Cys Phe 560 565 570			2388
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Tyr Ile Phe Arg Val Arg Ala Val Asn Ala Ala Gly Leu Ser Glu Tyr			
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Gly Tyr Tyr Val Asn Tyr Arg Glu Val Ile Asp Gly Val Pro Gly Lys			
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Trp Arg Glu Ala Asn Val Lys Ala Val Ser Glu Glu Ala Tyr Lys Ile			
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Ser Asn Leu Lys Glu Asn Met Val Tyr Gln Phe Gln Val Ala Ala Met			
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Cys Glu Glu Trp Thr Ile Ala Val Pro Gly Pro Pro His Ser Leu Lys			
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Cys Ser Glu Val Arg Lys Asp Ser Leu Val Leu Gln Trp Lys Pro Pro			
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Val His Ser Gly Arg Thr Pro Val Thr Gly Tyr Phe Val Asp Leu Lys			
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His Lys Phe Pro Thr Val Pro Val Lys Ser Glu Leu Ala Val Glu Ile				
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cagttcccca aggcacgcct tcttcccagg cagctctaac agccctttca tgaaggtaat			722
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tacagttggt gttgggggct taggcgaggg acgttaccgg gaagttgcag gcgggaggac	180
tcttccccat ccagtcacct gacaggtcac aaac	232
atg tca gac aaa agt gaa	
Met Ser Asp Lys Ser Glu	
1	5
tta aag gct gag ttg gaa cgt aag aag cag cga ctg gcc caa atc aga	280
Leu Lys Ala Glu Leu Glu Arg Lys Lys Gln Arg Leu Ala Gln Ile Arg	
10	15
20	
gag gaa aag aag aga aaa gaa gaa gaa agg aaa aaa aaa gaa aca gac	328
Glu Glu Lys Lys Arg Lys Glu Glu Glu Arg Lys Lys Lys Glu Thr Asp	
25	30
35	

cag aag aag gaa gct gtt gct cct gtg caa gaa gaa tca gat ctt gaa Gln Lys Lys Glu Ala Val Ala Pro Val Gln Glu Glu Ser Asp Leu Glu 40 45 50	376
aaa aaa agg aga gaa gct gaa gca ttg ctt caa agc atg ggg cta act Lys Lys Arg Arg Glu Ala Glu Ala Leu Leu Gln Ser Met Gly Leu Thr 55 60 65 70	424
cca gaa tcc ccc att gtc cct cct cct atg tct cca tcc tcc aaa tct Pro Glu Ser Pro Ile Val Pro Pro Pro Met Ser Pro Ser Ser Lys Ser 75 80 85	472
gtg agc act cca agt gaa gct gga agc caa gac tct gga gat ggc gcc Val Ser Thr Pro Ser Glu Ala Gly Ser Gln Asp Ser Gly Asp Gly Ala 90 95 100	520
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ctt cac tca gat tcc gat ttg gga cga gga cct att aaa ctt gga atg Leu His Ser Asp Ser Asp Leu Gly Arg Gly Pro Ile Lys Leu Gly Met 120 125 130	616
gct aaa atc acg caa gtc gac ttt cct cct cga gaa att gtc acg tat Ala Lys Ile Thr Gln Val Asp Phe Pro Pro Arg Glu Ile Val Thr Tyr 135 140 145 150	664
aca aag gaa act cag act cca gtt atg gct caa ccc aaa gaa gat gaa Thr Lys Glu Thr Gln Thr Pro Val Met Ala Gln Pro Lys Glu Asp Glu 155 160 165	712
gag gaa gat gat gat gta gtg gct cct aaa cca cct att gaa cct gaa Glu Glu Asp Asp Asp Val Val Ala Pro Lys Pro Pro Ile Glu Pro Glu 170 175 180	760
gaa gag aaa act tta aag aaa gat gag gaa aat gat agt aaa gct ccc Glu Glu Lys Thr Leu Lys Lys Asp Glu Glu Asn Asp Ser Lys Ala Pro 185 190 195	808
cct cat gag ctg act gaa gaa gaa aag caa caa atc ttg cac tct gag Pro His Glu Leu Thr Glu Glu Glu Lys Gln Gln Ile Leu His Ser Glu 200 205 210	856
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ctt tct gag cag att aac atc ttc ttt gac tat agt ggg aga gat ttg Leu Ser Glu Gln Ile Asn Ile Phe Phe Asp Tyr Ser Gly Arg Asp Leu 235 240 245	952
gaa gac aaa gaa gga gag att caa gca ggt gct aaa ctg tca tta aat Glu Asp Lys Glu Gly Glu Ile Gln Ala Gly Ala Lys Leu Ser Leu Asn 250 255 260	1000
cga caa ttt ttt gac gaa cgt tgg tca aag cat cgg gtg gtt agt tgt Arg Gln Phe Phe Asp Glu Arg Trp Ser Lys His Arg Val Val Ser Cys 265 270 275	1048
ttg gat tgg tca tct cag tat ccg gag tta ctc gtg gct tcc tat aac Leu Asp Trp Ser Ser Gln Tyr Pro Glu Leu Leu Val Ala Ser Tyr Asn 280 285 290	1096

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Asn Asn Glu Asp Ala Pro His Glu Pro Asp Gly Val Ala Leu Val Trp	
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Asn Met Lys Tyr Lys Lys Thr Thr Pro Glu Tyr Val Phe His Cys Gln	
315 320 325	
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Ser Ala Val Met Ser Ala Thr Phe Ala Lys Phe His Pro Asn Leu Val	
330 335 340	
gtt ggt ggt aca tat tca ggc caa att gtg ctt tgg gat aac cgt agc	1288
Val Gly Gly Thr Tyr Ser Gly Gln Ile Val Leu Trp Asp Asn Arg Ser	
345 350 355	
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Asn Lys Arg Thr Pro Val Gln Arg Thr Pro Leu Ser Ala Ala Ala His	
360 365 370	
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Thr His Pro Val Tyr Cys Val Asn Val Val Gly Thr Gln Asn Ala His	
375 380 385 390	
aat ctg att agc atc tct act gat gga aaa att tgt tca tgg agt ctg	1432
Asn Leu Ile Ser Ile Ser Thr Asp Gly Lys Ile Cys Ser Trp Ser Leu	
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gac atg ctt tcc cat cca cag gat agc atg gag ttg gtt cat aaa cag	1480
Asp Met Leu Ser His Pro Gln Asp Ser Met Glu Leu Val His Lys Gln	
410 415 420	
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Ser Lys Ala Val Ala Val Thr Ser Met Ser Phe Pro Val Gly Asp Val	
425 430 435	
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Asn Asn Phe Val Val Gly Ser Glu Glu Gly Ser Val Tyr Thr Ala Cys	
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Arg His Gly Ser Lys Ala Gly Ile Ser Glu Met Phe Glu Gly His Gln	
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Gly Pro Ile Thr Gly Ile His Cys His Ala Ala Val Gly Ala Val Asp	
475 480 485	
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Phe Ser His Leu Tyr Val Thr Ser Ser Phe Asp Trp Thr Val Lys Leu	
490 495 500	
tgg aca act aag aat aac aag cct ttg tat tca ttt gaa gat aac gca	1768
Trp Thr Thr Lys Asn Asn Lys Pro Leu Tyr Ser Phe Glu Asp Asn Ala	
505 510 515	
gac tat gtt tat gat gtt atg tgg tca cct acc cac cca gcc ctg ttt	1816
Asp Tyr Val Tyr Asp Val Met Trp Ser Pro Thr His Pro Ala Leu Phe	
520 525 530	
gcc tgt gtg gat ggc atg ggg aga ttg gat ttg tgg aat ctc aat aat	1864
Ala Cys Val Asp Gly Met Gly Arg Leu Asp Leu Trp Asn Leu Asn Asn	
535 540 545 550	

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gac aca gag gta cca act gcc agc att tct gtg gag ggt aat cct gct      1912
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                    555                      560                      565

ctt aat cgt gtg aga tgg acc cat tct ggc aga gag att gct gtg ggt      1960
Leu Asn Arg Val Arg Trp Thr His Ser Gly Arg Glu Ile Ala Val Gly
                    570                      575                      580

gat tct gaa gga cag att gtt ata tac gat gtg gga gag cag att gct      2008
Asp Ser Glu Gly Gln Ile Val Ile Tyr Asp Val Gly Glu Gln Ile Ala
                    585                      590                      595

gtt ccc cgc aat gat gaa tgg gca cgg ttt ggc cga aca ctt gca gaa      2056
Val Pro Arg Asn Asp Glu Trp Ala Arg Phe Gly Arg Thr Leu Ala Glu
                    600                      605                      610

att aat gca aac cga gct gat gca gag gag gaa gca gct acc cga ata      2104
Ile Asn Ala Asn Arg Ala Asp Ala Glu Glu Glu Ala Ala Thr Arg Ile
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cct gct tag ttcctga aaaggggagt gtaactagtg gatttgggaa aggttcttaa      2160
Pro Ala *

gtagatcctg agactatctg catgcttctg tctaaatgat aattaaaagg aaatttcctg      2220

gattaaacca tgggtttaat gcagcaagga aacttacaat gtccctttat atataacatg      2280

catcttggtt tggatttggt tcatttttta atatagctga ttgacttcac agaaagcagc      2340

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tacagttggt gttgggggct taggcgaggg acgttaccgg gaagttgcag gcgggaggac      180

tcttcccat ccagtcacct gacaggtcac aaac      atg tca gac aaa agt gaa      232
                               Met Ser Asp Lys Ser Glu

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Leu Lys Ala Glu Leu Glu Arg Lys Lys Gln Arg Leu Ala Gln Ile Arg	
10 15 20	
gag gaa aag aag aga aaa gaa gaa gaa agg aaa aaa aaa gaa aca gac	328
Glu Glu Lys Lys Arg Lys Glu Glu Glu Arg Lys Lys Lys Glu Thr Asp	
25 30 35	
cag aag aag gaa gct gtt gct cct gtg caa gaa gaa tca gat ctt gaa	376
Gln Lys Lys Glu Ala Val Ala Pro Val Gln Glu Glu Ser Asp Leu Glu	
40 45 50	
aaa aaa agg aga gaa gct gaa gca ttg ctt caa agc atg ggg cta act	424
Lys Lys Arg Arg Glu Ala Glu Ala Leu Leu Gln Ser Met Gly Leu Thr	
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cca gaa tcc ccc att gtc cct cct cct atg tct cca tcc tcc aaa tct	472
Pro Glu Ser Pro Ile Val Pro Pro Pro Met Ser Pro Ser Ser Lys Ser	
75 80 85	
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Val Ser Thr Pro Ser Glu Ala Gly Ser Gln Asp Ser Gly Asp Gly Ala	
90 95 100	
gtg gga tct aga cga gga cct att aaa ctt gga atg gct aaa atc acg	568
Val Gly Ser Arg Arg Gly Pro Ile Lys Leu Gly Met Ala Lys Ile Thr	
105 110 115	
caa gtc gac ttt cct cct cga gaa att gtc acg tat aca aag gaa act	616
Gln Val Asp Phe Pro Pro Arg Glu Ile Val Thr Tyr Thr Lys Glu Thr	
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Gln Thr Pro Val Met Ala Gln Pro Lys Glu Asp Glu Glu Glu Asp Asp	
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Asp Val Val Ala Pro Lys Pro Pro Ile Glu Pro Glu Glu Glu Lys Thr	
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Thr Glu Glu Glu Lys Gln Gln Ile Leu His Ser Glu Glu Phe Leu Ser	
185 190 195	
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Phe Phe Asp His Ser Thr Arg Ile Val Glu Arg Ala Leu Ser Glu Gln	
200 205 210	
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215 220 225 230	
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gcc	cct	cat	gag	cct	gat	ggg	gtg	gcc	ctt	gta	tgg	aat	atg	aaa	tac	1096				
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Lys	Lys	Thr	Thr	Pro	Glu	Tyr	Val	Phe	His	Cys	Gln	Ser	Ala	Val	Met					
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Tyr	Ser	Gly	Gln	Ile	Val	Leu	Trp	Asp	Asn	Arg	Ser	Asn	Lys	Arg	Thr					
330										335					340					
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Pro	Val	Gln	Arg	Thr	Pro	Leu	Ser	Ala	Ala	Ala	His	Thr	His	Pro	Val					
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Ile	Ser	Thr	Asp	Gly	Lys	Ile	Cys	Ser	Trp	Ser	Leu	Asp	Met	Leu	Ser					
375										380					385					390
cat	cca	cag	gat	agc	atg	gag	ttg	gtt	cat	aaa	cag	tca	aaa	gca	gta	1432				
His	Pro	Gln	Asp	Ser	Met	Glu	Leu	Val	His	Lys	Gln	Ser	Lys	Ala	Val					
395										400					405					
gct	gtg	aca	tct	atg	tcc	ttc	cct	gtt	gga	gat	gtc	aac	aac	ttt	gtt	1480				
Ala	Val	Thr	Ser	Met	Ser	Phe	Pro	Val	Gly	Asp	Val	Asn	Asn	Phe	Val					
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Val	Gly	Ser	Glu	Glu	Gly	Ser	Val	Tyr	Thr	Ala	Cys	Arg	His	Gly	Ser					
425										430					435					
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Lys	Ala	Gly	Ile	Ser	Glu	Met	Phe	Glu	Gly	His	Gln	Gly	Pro	Ile	Thr					
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ggc	atc	cat	tgt	cat	gca	gct	gtt	gga	gca	gta	gac	ttc	tca	cat	ctt	1624				
Gly	Ile	His	Cys	His	Ala	Ala	Val	Gly	Ala	Val	Asp	Phe	Ser	His	Leu					
455										460					465					470
tat	gtc	act	tca	tcg	ttt	gac	tgg	aca	gta	aag	ctt	tgg	aca	act	aag	1672				
Tyr	Val	Thr	Ser	Ser	Phe	Asp	Trp	Thr	Val	Lys	Leu	Trp	Thr	Thr	Lys					
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aat	aac	aag	cct	ttg	tat	tca	ttt	gaa	gat	aac	gca	gac	tat	gtt	tat	1720				
Asn	Asn	Lys	Pro	Leu	Tyr	Ser	Phe	Glu	Asp	Asn	Ala	Asp	Tyr	Val	Tyr					
490										495					500					
gat	gtt	atg	tgg	tca	cct	acc	cac	cca	gcc	ctg	ttt	gcc	tgt	gtg	gat	1768				
Asp	Val	Met	Trp	Ser	Pro	Thr	His	Pro	Ala	Leu	Phe	Ala	Cys	Val	Asp					

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Arg Trp Thr His Ser Gly Arg Glu Ile Ala Val Gly Asp Ser Glu Gly			
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Gln Ile Val Ile Tyr Asp Val Gly Glu Gln Ile Ala Val Pro Arg Asn			
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Asp Glu Trp Ala Arg Phe Gly Arg Thr Leu Ala Glu Ile Asn Ala Asn			
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cga gct gat gca gag gag gaa gca gct acc cga ata cct gct tag ttc			2056
Arg Ala Asp Ala Glu Glu Glu Ala Ala Thr Arg Ile Pro Ala *			
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cgc aaa atc aac cac ttc ttg ggg gac cat cct gcg ccc act gtc aat Arg Lys Ile Asn His Phe Leu Gly Asp His Pro Ala Pro Thr Val Asn 125 130 135	1035
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Glu Glu Lys Gly Leu Gln Glu Leu Ala Glu Glu Ile Glu Val Leu Ala	
220 225 230	
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Ala Asn Ile Asp Tyr Ile Asn Asp Gly Ile Thr Asp Cys Gln Ala Thr	
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Ile Val Gln Leu Glu Glu Thr Lys Glu Glu Leu Asp Ser Thr Asp Thr	
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Ser Val Val Ile Ser Ser Cys Ser Leu Ala Glu Ala Arg Leu Leu Leu	
265 270 275 280	
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Thr Arg Ser Ala His Gly Leu Glu Ser Asp Val Trp Ser Leu Gly Cys	
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 Asn Phe His *
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 tgcttcagaa gcccctgacc cc atg gag gag tgg gac gtg cca cag atg aag 172
 Met Glu Glu Trp Asp Val Pro Gln Met Lys
 1 5 10

 aaa gag gtg gag agc ctt aag tac cag ctg gcc ttc cag cgg gag atg 220
 Lys Glu Val Glu Ser Leu Lys Tyr Gln Leu Ala Phe Gln Arg Glu Met
 15 20 25

 gcg tcc aag acc atc ccc gag ctg ctg aag tgg atc gag gac ggg atc 268
 Ala Ser Lys Thr Ile Pro Glu Leu Leu Lys Trp Ile Glu Asp Gly Ile
 30 35 40

 ccc aag gac ccc ttc ctg aac ccc gac ctg atg aag aac aac cca tgg 316

Pro Lys Asp Pro Phe Leu Asn Pro Asp Leu Met Lys Asn Asn Pro Trp
45 50 55

gtg gaa aag ggc aaa tgc acc atc ctg tga g ccccgacccc ggccctctc 367
Val Glu Lys Gly Lys Cys Thr Ile Leu *

60 65

acaccatcct gtgagaccac gcccggtccc actctcacca tcttgtaaga atgtgcccag 427
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1 5 10 15

cag cgc ctg agc atc cac tta cag gac act cac ctg cag agg tac cct 96
Gln Arg Leu Ser Ile His Leu Gln Asp Thr His Leu Gln Arg Tyr Pro
20 25 30

gag cac cgt tgt ggg tta agg gac ttt ctc ccc tct gga aac agt cct 144
Glu His Arg Cys Gly Leu Arg Asp Phe Leu Pro Ser Gly Asn Ser Pro
35 40 45

gag aag ctg aag gtc ttg ggg gcc tct cac caa atg tct ttg gga gat 192
Glu Lys Leu Lys Val Leu Gly Ala Ser His Gln Met Ser Leu Gly Asp
50 55 60

gcc caa gag agc tgc tcc atg cgc tgt ggc gcc ctg gac agg cca tgt 240
Ala Gln Glu Ser Cys Ser Met Arg Cys Gly Ala Leu Asp Arg Pro Cys
65 70 75 80

tcc tgc cac ccg acg tgc tcc ggc ctt ggt acc tgc tgc ttg gat ttc 288
Ser Cys His Pro Thr Cys Ser Gly Leu Gly Thr Cys Cys Leu Asp Phe
85 90 95

cag gac ttc tgc ctg gag ata ttg ccc tac tca gtc tcc atg atg ggc 336
Gln Asp Phe Cys Leu Glu Ile Leu Pro Tyr Ser Val Ser Met Met Gly
100 105 110

ggc aag gac ttt gtg gtg cgg cac ttc aag atg tcc agc ccc aca gac 384
Gly Lys Asp Phe Val Val Arg His Phe Lys Met Ser Ser Pro Thr Asp
115 120 125

acc agc cca cag gtt tgc atg cca cag gag agc atc cag acc ctc ggc 432
Thr Ser Pro Gln Val Cys Met Pro Gln Glu Ser Ile Gln Thr Leu Gly
130 135 140

cat gtg gac tcc tcc ggg caa gtg cac ttc gtg tgc ccc ctg ctc tat 480
His Val Asp Ser Ser Gly Gln Val His Phe Val Ser Pro Leu Leu Tyr

145	150	155	160	
gag agc ggc cac gtc ccc ttc acc atc tca ctg gac gat ggc cac tcc				528
Glu Ser Gly His Val Pro Phe Thr Ile Ser Leu Asp Asp Gly His Ser				
	165	170	175	
ttc cct cgt gcg ggc act tgg ctg gct gtg cac ccc aac aaa gtg ttg				576
Phe Pro Arg Ala Gly Thr Trp Leu Ala Val His Pro Asn Lys Val Leu				
	180	185	190	
atg aag gag aag agt gag ttg atg aac gag atg cat tgg caa tac tac				624
Met Lys Glu Lys Ser Glu Leu Met Asn Glu Met His Trp Gln Tyr Tyr				
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ggc acc gcc aac acc tca ggc aac ctc agc ctg acc tgg cac gtt gag				672
Gly Thr Ala Asn Thr Ser Gly Asn Leu Ser Leu Thr Trp His Val Glu				
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Ala Leu Pro Thr Gln Thr Pro Ser Ser Cys Gly Ala Met Arg Arg Gln				
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gtg aga aag ctg gac cgg gag agg gta gga gct tgg tgg aga ggc gcc				768
Val Arg Lys Leu Asp Arg Glu Arg Val Gly Ala Trp Trp Arg Gly Ala				
	245	250	255	
tgg gcc aga cat ccg cgg cag gag gcg ggg gaa cat gcc aag agg cgg				816
Trp Ala Arg His Pro Arg Gln Glu Ala Gly Glu His Ala Lys Arg Arg				
	260	265	270	
aag ggg cac gcg gag acc ccc agg ggg cgc cgg aag ggg cgc gcc ggg				864
Lys Gly His Ala Glu Thr Pro Arg Gly Arg Arg Lys Gly Arg Ala Gly				
	275	280	285	
cgg tcg gcg gcg gcc gtt ggc gag ctg agg cct gcc agg cga agt ctg				912
Arg Ser Ala Ala Ala Val Gly Glu Leu Arg Pro Ala Arg Arg Ser Leu				
	290	295	300	
gag acc agc cgg gcc gcg gcc gca atg gcc aag gac tcg ccc agc ccc				960
Glu Thr Ser Arg Ala Ala Ala Ala Met Ala Lys Asp Ser Pro Ser Pro				
	305	310	315	320
ttg ggc gcg tcg ccc aag aag ccg ggc tgc tcc agc ccg gcg gcg gca				1008
Leu Gly Ala Ser Pro Lys Lys Pro Gly Cys Ser Ser Pro Ala Ala Ala				
	325	330	335	
gtg ctg gag aac cag agg cgg gag ctg gag aag cta cgg gcg gag ctg				1056
Val Leu Glu Asn Gln Arg Arg Glu Leu Glu Lys Leu Arg Ala Glu Leu				
	340	345	350	
gag gcg gag cgg gca ggc tgg cgg gcg gaa cgg cgg cgc ttc gct gcc				1104
Glu Ala Glu Arg Ala Gly Trp Arg Ala Glu Arg Arg Arg Phe Ala Ala				
	355	360	365	
cgg gag cgc cag ctg cgt gag gag gcc gag cgg gag cgg cga cag ctg				1152
Arg Glu Arg Gln Leu Arg Glu Glu Ala Glu Arg Glu Arg Arg Gln Leu				
	370	375	380	
gct gac cgt ctg cgc tcc aag tgg gag gca cag cgc agc cgg gag ttg				1200
Ala Asp Arg Leu Arg Ser Lys Trp Glu Ala Gln Arg Ser Arg Glu Leu				
	385	390	395	400
cgg cag ctg caa gag gag atg cag cgg gaa cgc gag gcc gag atc cgg				1248
Arg Gln Leu Gln Glu Glu Met Gln Arg Glu Arg Glu Ala Glu Ile Arg				

405	410	415	
cag ctg ctg cgc tgg aag gag gcc gag cag cgg cag ctg cag cag ctg Gln Leu Leu Arg Trp Lys Glu Ala Glu Gln Arg Gln Leu Gln Gln Leu 420 425 430			1296
ctg cac cgg gag cgc gat ggc gtg gtg cgc caa gcc cgg gag ctg cag Leu His Arg Glu Arg Asp Gly Val Val Arg Gln Ala Arg Glu Leu Gln 435 440 445			1344
cgc cag ctg gcc gag gag ctg gtg aac cgc ggc cac tgt agc cgc ccg Arg Gln Leu Ala Glu Glu Leu Val Asn Arg Gly His Cys Ser Arg Pro 450 455 460			1392
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atc cgc tat ctg cag gcg gcg ctg gag gtg gag cgc cag ctc ttc ctc Ile Arg Tyr Leu Gln Ala Ala Leu Glu Val Glu Arg Gln Leu Phe Leu 500 505 510			1536
aag tac atc ctg gcg cac ttc cgc ggg cac ccg gct ttg tcg gga tca Lys Tyr Ile Leu Ala His Phe Arg Gly His Pro Ala Leu Ser Gly Ser 515 520 525			1584
ccg gac ccc caa gct gtg cat tcc ttg gaa gaa ccg ctg ccc cag acc Pro Asp Pro Gln Ala Val His Ser Leu Glu Glu Pro Leu Pro Gln Thr 530 535 540			1632
tcc agc ggc tct tgc cac gcc ccc aaa ccc gcc tgc caa ctc gga tct Ser Ser Gly Ser Cys His Ala Pro Lys Pro Ala Cys Gln Leu Gly Ser 545 550 555 560			1680
cta gac agc ctg agt gct gaa gtc ggt gtg cgc tcc cgc tcg cta ggc Leu Asp Ser Leu Ser Ala Glu Val Gly Val Arg Ser Arg Ser Leu Gly 565 570 575			1728
ctg gtg tcc tct gcg tgc tcc agc tcc cca gac ggc ctg ctc tcc acg Leu Val Ser Ser Ala Cys Ser Ser Ser Pro Asp Gly Leu Leu Ser Thr 580 585 590			1776
cac gcc agc tcc ctt gat tgc ttc gca cct gcg tgt tcc cgc tcg ctt His Ala Ser Ser Leu Asp Cys Phe Ala Pro Ala Cys Ser Arg Ser Leu 595 600 605			1824
gac agc acc cgg agc ctc ccc aag gcc tcc aaa tcc gag gag cgg ccc Asp Ser Thr Arg Ser Leu Pro Lys Ala Ser Lys Ser Glu Glu Arg Pro 610 615 620			1872
tcc tca cca gac acc tcc acc cct ggc tcc cgg agg ctc tcg ccg cca Ser Ser Pro Asp Thr Ser Thr Pro Gly Ser Arg Arg Leu Ser Pro Pro 625 630 635 640			1920
cca tcg cca ctc ccg ccg cca cca cca ccg tca gcc cac agg aaa ctc Pro Ser Pro Leu Pro Pro Pro Pro Pro Ser Ala His Arg Lys Leu 645 650 655			1968
agc aac ccg cgg gga gga gaa ggc tct gag agc cag ccc tgc gaa gtc Ser Asn Pro Arg Gly Gly Glu Gly Ser Glu Ser Gln Pro Cys Glu Val 2016			

660	665	670	
ctg act ccc tca ccc ccg ggc ctg ggc cac cac gag ctg ata aag ctg Leu Thr Pro Ser Pro Pro Gly Leu Gly His His Glu Leu Ile Lys Leu 675 680 685			2064
aac tgg ctg ctg gcc aag gcg ttg tgg gtg ctg gcg cgc cgc tgt tat Asn Trp Leu Leu Ala Lys Ala Leu Trp Val Leu Ala Arg Arg Cys Tyr 690 695 700			2112
acc ctg caa gcg gag aac aag cag ctg cgg cgt gca gcc tgc ccc tac Thr Leu Gln Ala Glu Asn Lys Gln Leu Arg Arg Ala Gly Cys Pro Tyr 705 710 715 720			2160
cag gca gac gag aag gtg aag cgg ctc aag gta aag cgc gcg gag ctg Gln Ala Asp Glu Lys Val Lys Arg Leu Lys Val Lys Arg Ala Glu Leu 725 730 735			2208
acc ggg ctc gcg cgg cgc cta gct gac cgc gcc cgc aag ctg cag gag Thr Gly Leu Ala Arg Arg Leu Ala Asp Arg Ala Arg Lys Leu Gln Glu 740 745 750			2256
acc aac ctc cgg gcc gtg agc gcg cct ata ccc gcc gag agt tgc gcc Thr Asn Leu Arg Ala Val Ser Ala Pro Ile Pro Gly Glu Ser Cys Ala 755 760 765			2304
ggc ctg gag ctg tgc caa gtc ttt gcc cgc cag cgc gct cgg gac ctg Gly Leu Glu Leu Cys Gln Val Phe Ala Arg Gln Arg Ala Arg Asp Leu 770 775 780			2352
tcg gag cag gcg agc gcg ccg ctg gcc aag gac aag cag atc gaa gag Ser Glu Gln Ala Ser Ala Pro Leu Ala Lys Asp Lys Gln Ile Glu Glu 785 790 795 800			2400
ctg cgg cag gag tgc cac ctc ctg cag gcg cgt gtc gcc tcg ggt ccc Leu Arg Gln Glu Cys His Leu Leu Gln Ala Arg Val Ala Ser Gly Pro 805 810 815			2448
tgc agc gac ctg cat act gga agg ggc ggc ccc tgc acc cag tgg ctc Cys Ser Asp Leu His Thr Gly Arg Gly Gly Pro Cys Thr Gln Trp Leu 820 825 830			2496
aac gtc aga gac tta gac cgc ctg cag cgc gag tcc cag cgg gaa gtg Asn Val Arg Asp Leu Asp Arg Leu Gln Arg Glu Ser Gln Arg Glu Val 835 840 845			2544
ctg cgc ctg cag agg cag ttg atg ctt cag cag gcc aac ggt ggc gct Leu Arg Leu Gln Arg Gln Leu Met Leu Gln Gln Gly Asn Gly Gly Ala 850 855 860			2592
tgg ccc gag gcg ggc ggc cag agc gca acc tgc gag gag gtg cga cgg Trp Pro Glu Ala Gly Gly Gln Ser Ala Thr Cys Glu Glu Val Arg Arg 865 870 875 880			2640
cag atg ctg gcg ctg gag cgc gag ctg gac cag cgg cgg cgc gag tgc Gln Met Leu Ala Leu Glu Arg Glu Leu Asp Gln Arg Arg Arg Glu Cys 885 890 895			2688
cag gag ctg gcc gcg cag gcg gcc ccg gcg cgg cga cgt gcc gag gag Gln Glu Leu Gly Ala Gln Ala Ala Pro Ala Arg Arg Arg Gly Glu Glu 900 905 910			2736
gcc gag aca cag ctg cag gcg gcg ctg ctc aaa aac gcc tgg ctg gcg Ala Glu Thr Gln Leu Gln Ala Ala Leu Leu Lys Asn Ala Trp Leu Ala 2784			

915	920	925	
gag gag aat ggg cgg ctg	cag gcc aag acc gac	tgg gtg cgg aag gtg	2832
Glu Glu Asn Gly Arg Leu	Gln Ala Lys Thr Asp	Trp Val Arg Lys Val	
930	935	940	
gag gct gag aat agc gaa gtg	cgc ggc cac ctg ggc cgc	gcg tgt caa	2880
Glu Ala Glu Asn Ser Glu	Val Arg Gly His Leu	Gly Arg Ala Cys Gln	
945	950	955 960	
gag cgc gat gcc tcc ggc ttg	atc gcc gaa cag ctg	ctg cag cag gcg	2928
Glu Arg Asp Ala Ser Gly	Leu Ile Ala Glu Gln	Leu Leu Gln Gln Ala	
965	970	975	
gcg cgc ggg cag gac agg	cag cag cag ctg caa	cgc gac ccg cag aag	2976
Ala Arg Gly Gln Asp Arg	Gln Gln Gln Leu Gln	Arg Asp Pro Gln Lys	
980	985	990	
gcc ctg tgt gac ctc cat	cct tcc tgg aag gag	ata cag gcg ctc cag	3024
Ala Leu Cys Asp Leu His	Pro Ser Trp Lys Glu	Ile Gln Ala Leu Gln	
995	1000	1005	
tgt cgg cct ggt cac cct	cct gaa cag ccc tgg	gag acc agt caa atg	3072
Cys Arg Pro Gly His Pro	Pro Glu Gln Pro Trp	Glu Thr Ser Gln Met	
1010	1015	1020	
ccg gag tcc caa gtt aaa	ggt agc aga agg ccc	aag ttc cac gca cgg	3120
Pro Glu Ser Gln Val Lys	Gly Ser Arg Arg Pro	Lys Phe His Ala Arg	
1025	1030	1035 1040	
cct gaa gac tac gca gtg	tca cag ccc aac aga	gac ata cag gag aaa	3168
Pro Glu Asp Tyr Ala Val	Ser Gln Pro Asn Arg	Asp Ile Gln Glu Lys	
1045	1050	1055	
agg gaa gcc tcc ctc gag	gag agc cca gtt gcc	ctt ggg gag tca gcc	3216
Arg Glu Ala Ser Leu Glu	Glu Ser Pro Val Ala	Leu Gly Glu Ser Ala	
1060	1065	1070	
agt gtc ccc caa gtt tca	gag aca gtc cct gcc	agc caa cct ctg tcc	3264
Ser Val Pro Gln Val Ser	Glu Thr Val Pro Ala	Ser Gln Pro Leu Ser	
1075	1080	1085	
aag aaa acc agc tcc cag	tca aac tcc tcc tct	gag ggg tcg atg tgg	3312
Lys Lys Thr Ser Ser Gln	Ser Asn Ser Ser Ser	Glu Gly Ser Met Trp	
1090	1095	1100	
gcc acc gtg ccg tcc tcc	cct act ctg gac agg	gac aca gcc agt gag	3360
Ala Thr Val Pro Ser Ser	Pro Thr Leu Asp Arg	Asp Thr Ala Ser Glu	
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Val Asp Asp Leu Glu Pro	Asp Ser Val Ser Leu	Ala Leu Glu Met Gly	
1125	1130	1135	
ggc tcg gcg gct cct gct	gcc ccc aag ctc aag	atc ttc atg gct cag	3456
Gly Ser Ala Ala Pro Ala	Ala Pro Lys Leu Lys	Ile Phe Met Ala Gln	
1140	1145	1150	
tat aac tac aac cca ttt	gag ggg ccc aat gat	cac cct gag ggt gag	3504
Tyr Asn Tyr Asn Pro Phe	Glu Gly Pro Asn Asp	His Pro Glu Gly Glu	
1155	1160	1165	
ctg ccc ctc aca gct ggg	gac tac ata tat atc	ttc ggg gac atg gat	3552
Leu Pro Leu Thr Ala Gly	Asp Tyr Ile Tyr Ile	Phe Gly Asp Met Asp	

1170	1175	1180	
gag gat ggc ttc tat	gag ggg gag ctt	gag gat ggc cgg cgg ggg ctg	3600
Glu Asp Gly Phe Tyr	Glu Gly Glu Leu	Glu Asp Gly Arg Arg Gly Leu	
1185	1190	1195 1200	
gtg ccc tcc aac ttc	gtg gag cag att	ccg gac agc tac atc cca ggc	3648
Val Pro Ser Asn Phe	Val Glu Gln Ile	Pro Asp Ser Tyr Ile Pro Gly	
1205	1210	1215	
tgc ctg cct gcc aaa tcc	cct gat ctt ggc ccc	agt caa ctc cca gcg	3696
Cys Leu Pro Ala Lys	Ser Pro Asp Leu	Gly Pro Ser Gln Leu Pro Ala	
1220	1225	1230	
ggg cag gat gaa gct	ctg gag gaa gac	agc tta tta tct ggg aaa gcc	3744
Gly Gln Asp Glu Ala	Leu Glu Glu Asp	Ser Leu Leu Ser Gly Lys Ala	
1235	1240	1245	
cag gga gtg gtg gac	aga ggg ctg tgc	cag atg gtc agg gtg ggc tcc	3792
Gln Gly Val Val Asp	Arg Gly Leu Cys	Gln Met Val Arg Val Gly Ser	
1250	1255	1260	
aag aca gaa gta gca	aca gag atc ctg	gat acc aag acg gaa gcc tgc	3840
Lys Thr Glu Val Ala	Thr Glu Ile Leu	Asp Thr Lys Thr Glu Ala Cys	
1265	1270	1275 1280	
cag ctg ggc ttg ctg	cag agc atg ggg aag	cag ggc ctc tcc aga ccc	3888
Gln Leu Gly Leu Leu	Gln Ser Met Gly	Lys Gln Gly Leu Ser Arg Pro	
1285	1290	1295	
ctt ctg ggg acc aaa	ggg gtg ctc cgt	atg gct ccc atg cag cta cac	3936
Leu Leu Gly Thr Lys	Gly Val Leu Arg	Met Ala Pro Met Gln Leu His	
1300	1305	1310	
ctg cag aat gtc aca	gcc aca tca gcc	aac atc acc tgg gtc tac agc	3984
Leu Gln Asn Val Thr	Ala Thr Ser Ala	Asn Ile Thr Trp Val Tyr Ser	
1315	1320	1325	
agc cac cgc cac ccc	cat gtg gta tat	ctt gat gac cga gag cat gcc	4032
Ser His Arg His Pro	His Val Val Tyr	Leu Asp Asp Arg Glu His Ala	
1330	1335	1340	
ctg acc cca gcg ggc	gtg agc tgc tac	acc ttc cag ggc ctg tgc ccc	4080
Leu Thr Pro Ala Gly	Val Ser Cys Tyr	Thr Phe Gln Gly Leu Cys Pro	
1345	1350	1355 1360	
ggc acg cac tac cgg	gcg cgg gtg gag	gtg cgg ctg cca cgg gac ttg	4128
Gly Thr His Tyr Arg	Ala Arg Val Glu	Val Arg Leu Pro Arg Asp Leu	
1365	1370	1375	
ctg cag gtg tat tgg	gga act atg tcc	tcc acc gtc acc ttc gac aca	4176
Leu Gln Val Tyr Trp	Gly Thr Met Ser	Ser Thr Val Thr Phe Asp Thr	
1380	1385	1390	
ctc ttg gca gga cct	ccc tac cca ccg	ctg gat gtg ctg gtg gag cgc	4224
Leu Leu Ala Gly Pro	Pro Tyr Pro Pro	Leu Asp Val Leu Val Glu Arg	
1395	1400	1405	
cat gcc tcg cca ggt	gtc ctg gtg gtc	agc tgg ctc cct gtg acc att	4272
His Ala Ser Pro Gly	Val Leu Val Val	Ser Trp Leu Pro Val Thr Ile	
1410	1415	1420	
gac tca gct ggg tcc	tcc aat gga gtc	cag gtc acc ggt tat gct gtg	4320
Asp Ser Ala Gly Ser	Ser Asn Gly Val	Gln Val Thr Gly Tyr Ala Val	

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tat gca gat ggg ctt aag gtt tgt gag gtc gcc gat gcc act gct ggg				4368
Tyr Ala Asp Gly Leu Lys Val Cys Glu Val Ala Asp Ala Thr Ala Gly				
1445		1450	1455	
agc acc cta ttg gaa ttc tcc cag cta cag gtg ccc ctc acg tgg cag				4416
Ser Thr Leu Leu Glu Phe Ser Gln Leu Gln Val Pro Leu Thr Trp Gln				
1460		1465	1470	
aag gtc tca gtg aga acc atg tca ctc tgt ggt gag tcc ctg gat tca				4464
Lys Val Ser Val Arg Thr Met Ser Leu Cys Gly Glu Ser Leu Asp Ser				
1475		1480	1485	
gtg cct gct cag atc ccc gag gac ttc ttc atg tgt cac cga tgg cca				4512
Val Pro Ala Gln Ile Pro Glu Asp Phe Phe Met Cys His Arg Trp Pro				
1490		1495	1500	
gag act cca ccc ttt agc tac act tgt ggc gac cca tcc acc tac aga				4560
Glu Thr Pro Pro Phe Ser Tyr Thr Cys Gly Asp Pro Ser Thr Tyr Arg				
1505		1510	1515	1520
gtc acc ttc ccc gtc tgc ccc cag aag ctg tca ctg gct cct ccg agt				4608
Val Thr Phe Pro Val Cys Pro Gln Lys Leu Ser Leu Ala Pro Pro Ser				
1525		1530	1535	
gcc aag gcc agc ccc cac aac cct gga agc tgc ggg gag ccc cag gcc				4656
Ala Lys Ala Ser Pro His Asn Pro Gly Ser Cys Gly Glu Pro Gln Ala				
1540		1545	1550	
aag ttc cta gaa gca ttc ttt gaa gaa ccc cca agg agg caa tcc cca				4704
Lys Phe Leu Glu Ala Phe Phe Glu Glu Pro Pro Arg Arg Gln Ser Pro				
1555		1560	1565	
gtg tcc aac ctg ggc tca gaa gga gaa tgt ccg agt tca ggg gct ggc				4752
Val Ser Asn Leu Gly Ser Glu Gly Glu Cys Pro Ser Ser Gly Ala Gly				
1570		1575	1580	
agc caa gcc cag gag ctt gca gag gcc tgg gag ggc tgt aga aag gac				4800
Ser Gln Ala Gln Glu Leu Ala Glu Ala Trp Glu Gly Cys Arg Lys Asp				
1585		1590	1595	1600
ctg ctc ttt cag aag agt ccc cag aac cac agg cca cct tca gtc agt				4848
Leu Leu Phe Gln Lys Ser Pro Gln Asn His Arg Pro Pro Ser Val Ser				
1605		1610	1615	
gac cag cct ggg gag aag gaa aat tgc tcc cag cac atg ggc acc agc				4896
Asp Gln Pro Gly Glu Lys Glu Asn Cys Ser Gln His Met Gly Thr Ser				
1620		1625	1630	
aaa agc cct gct cca gga ttc atc cat cta cgc acc gag tgt ggg ccc				4944
Lys Ser Pro Ala Pro Gly Phe Ile His Leu Arg Thr Glu Cys Gly Pro				
1635		1640	1645	
agg aaa gaa ccg tgt cag gaa aag gct gcc ctt gag agg gta ctt cgg				4992
Arg Lys Glu Pro Cys Gln Glu Lys Ala Ala Leu Glu Arg Val Leu Arg				
1650		1655	1660	
caa aag caa gat gcc caa ggg ttc aca cct ccc cag ctg ggc gcc agc				5040
Gln Lys Gln Asp Ala Gln Gly Phe Thr Pro Pro Gln Leu Gly Ala Ser				
1665		1670	1675	1680
caa cag tat gca tct gac ttc cat aac gtt ttg aag gag gag cag gag				5088
Gln Gln Tyr Ala Ser Asp Phe His Asn Val Leu Lys Glu Glu Gln Glu				

1685	1690	1695	
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gag cct gag ccc cac agc agg caa gga caa gct ctg ggg gtg aag aga Glu Pro Glu Pro His Ser Arg Gln Gly Gln Ala Leu Gly Val Lys Arg 1715 1720 1725			5184
ggg tgc cag ctc cat gag ccc agc tcg gca ctg tgt cca gct cca tcc Gly Cys Gln Leu His Glu Pro Ser Ser Ala Leu Cys Pro Ala Pro Ser 1730 1735 1740			5232
gcc aaa gtc atc aag atg ccc agg ggt ggc ccc caa cag ctg ggg acg Ala Lys Val Ile Lys Met Pro Arg Gly Gly Pro Gln Gln Leu Gly Thr 1745 1750 1755 1760			5280
ggg gcc aac act cca gcc agg gtc ttt gtg gcc ctc tct gat tac aac Gly Ala Asn Thr Pro Ala Arg Val Phe Val Ala Leu Ser Asp Tyr Asn 1765 1770 1775			5328
ccc ctg gtg atg tct gcc aac ctc aag gct gca gag gag gag ctg gtc Pro Leu Val Met Ser Ala Asn Leu Lys Ala Ala Glu Glu Glu Leu Val 1780 1785 1790			5376
ttc cag aaa agg cag ttg cta aga gtg tgg ggc tct cag gac acc cat Phe Gln Lys Arg Gln Leu Leu Arg Val Trp Gly Ser Gln Asp Thr His 1795 1800 1805			5424
gat ttc tac ctc agc gag tgc aac agg caa gtg ggc aat atc ccc ggg Asp Phe Tyr Leu Ser Glu Cys Asn Arg Gln Val Gly Asn Ile Pro Gly 1810 1815 1820			5472
cgc cta gtg gct gag atg gag gtg ggg aca gag cag act gat agg agg Arg Leu Val Ala Glu Met Glu Val Gly Thr Glu Gln Thr Asp Arg Arg 1825 1830 1835 1840			5520
tgg cgt tct ccg gcc caa ggg cac ctg cct tct gtg gcc cac ctc gag Trp Arg Ser Pro Ala Gln Gly His Leu Pro Ser Val Ala His Leu Glu 1845 1850 1855			5568
gac ttt cag ggg ctc acc atc ccc cag ggt tcc tcc ctg gtg ctc cag Asp Phe Gln Gly Leu Thr Ile Pro Gln Gly Ser Ser Leu Val Leu Gln 1860 1865 1870			5616
ggg aac tcc aag aga ctc cca ctg tgg act cca aag atc atg ata gca Gly Asn Ser Lys Arg Leu Pro Leu Trp Thr Pro Lys Ile Met Ile Ala 1875 1880 1885			5664
gct ctg gac tat gat cct ggg gat ggg caa atg ggg ggc cag ggg aag Ala Leu Asp Tyr Asp Pro Gly Asp Gly Gln Met Gly Gly Gln Gly Lys 1890 1895 1900			5712
ggc agg ctg gcg ctg agg gca gga gac gtg gtc atg gtt tac ggg ccc Gly Arg Leu Ala Leu Arg Ala Gly Asp Val Val Met Val Tyr Gly Pro 1905 1910 1915 1920			5760
atg gat gac caa gga ttc tat tat gga gag ttg ggc ggc cac agg ggc Met Asp Asp Gln Gly Phe Tyr Tyr Gly Glu Leu Gly Gly His Arg Gly 1925 1930 1935			5808
ctg gtt cct gcc cac ctg ctg gat cac atg tcc ctc cat gga cac tga Leu Val Pro Ala His Leu Leu Asp His Met Ser Leu His Gly His *			5856

1940

1945

1950

gcaagcatcc ttgcccaggt agtggcctct ggctgctcac accctgccag aggagaagca 5916
 agcgttcaga ccctcacacc agcaccctc ctcaccacca taagtagcat gtgctccaag 5976
 tgccactgtg ttaaactgat ggtagtcctt aagtgtcccc taggctctga aagtagcagg 6036
 acttaagcct gagttatttg caaaagcaaa cacaacaagc caaccctga gagtctgaga 6096
 agccatttca aagttgctga taactatggc aggtatacgg agaagcgcct ttttctgtgg 6156
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<210> 514

<211> 1265

<212> DNA

<213> Homo sapiens

<220>

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<222> (204) .. (1265)

<400> 514

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 aggatcccca cctctctgca atgggctgcc caggctgacc agccgggttcc tgctggaagc 180
 tcctgggtctg atctggggat acc atg tcc aag ccc ccc gac ctc ctg ctg 230
 Met Ser Lys Pro Pro Asp Leu Leu Leu
 1 5
 cgg ctg ctc cgg ggc gcc cca agg cag cgg gtc tgc acc ctg ttc atc 278
 Arg Leu Leu Arg Gly Ala Pro Arg Gln Arg Val Cys Thr Leu Phe Ile
 10 15 20 25
 atc ggc ttc aag ttc acg ttt ttc gtc tcc atc gtg atc tac tgg cac 326
 Ile Gly Phe Lys Phe Thr Phe Phe Val Ser Ile Val Ile Tyr Trp His
 30 35 40
 gtt gtg gga gag ccc aag gag aaa ggg cag ctc tat aac ctg cca gca 374
 Val Val Gly Glu Pro Lys Glu Lys Gly Gln Leu Tyr Asn Leu Pro Ala
 45 50 55
 gag atc ccc tgc ccc acc ttg aca ccc ccc acc cca ccc tcc cac ggc 422
 Glu Ile Pro Cys Pro Thr Leu Thr Pro Pro Thr Pro Pro Ser His Gly
 60 65 70
 ccc act cca ggc aac atc ttc ttc ctg gag act tca gac cgg acc aac 470
 Pro Thr Pro Gly Asn Ile Phe Phe Leu Glu Thr Ser Asp Arg Thr Asn
 75 80 85
 ccc aac ttc ctg ttc atg tgc tgc gtg gag tgc gcc gcc aga act cac 518
 Pro Asn Phe Leu Phe Met Cys Ser Val Glu Ser Ala Ala Arg Thr His
 90 95 100 105
 ccc gaa tcc cac gtg ctg gtc ctg atg aaa ggg ctt ccg ggt ggc aac 566

Pro	Glu	Ser	His	Val	Leu	Val	Leu	Met	Lys	Gly	Leu	Pro	Gly	Gly	Asn		
				110					115						120		
gcc	tct	ctg	ccc	cgg	cac	ctg	ggc	atc	tca	ctt	ctg	agc	tgc	ttc	ccg	614	
Ala	Ser	Leu	Pro	Arg	His	Leu	Gly	Ile	Ser	Leu	Leu	Ser	Cys	Phe	Pro		
			125					130					135				
aat	gtc	cag	atg	ctc	ccg	ctg	gac	ctg	cgg	gag	ctg	ttc	cgg	gac	aca	662	
Asn	Val	Gln	Met	Leu	Pro	Leu	Asp	Leu	Arg	Glu	Leu	Phe	Arg	Asp	Thr		
			140					145				150					
ccc	ctg	gcc	gac	tgg	tac	gcg	gcc	gtg	cag	ggg	cgc	tgg	gag	ccc	tac	710	
Pro	Leu	Ala	Asp	Trp	Tyr	Ala	Ala	Val	Gln	Gly	Arg	Trp	Glu	Pro	Tyr		
			155					160				165					
ctg	ctg	ccc	gtg	ctc	tcc	gac	gcc	tcc	agg	atc	gca	ctc	atg	tgg	aag	758	
Leu	Leu	Pro	Val	Leu	Ser	Asp	Ala	Ser	Arg	Ile	Ala	Leu	Met	Trp	Lys		
						175				180					185		
ttc	ggc	ggc	atc	tac	ctg	gac	acg	gac	ttc	att	gtt	ctc	aag	aac	ctg	806	
Phe	Gly	Gly	Ile	Tyr	Leu	Asp	Thr	Asp	Phe	Ile	Val	Leu	Lys	Asn	Leu		
				190					195					200			
cgg	aac	ctg	acc	aac	gtg	ctg	ggc	acc	cag	tcc	cgc	tac	gtc	ctc	aac	854	
Arg	Asn	Leu	Thr	Asn	Val	Leu	Gly	Thr	Gln	Ser	Arg	Tyr	Val	Leu	Asn		
			205					210					215				
ggc	gcg	ttc	ctg	gcc	ttc	gag	cgc	cgg	cac	gag	ttc	atg	gcg	ctg	tgc	902	
Gly	Ala	Phe	Leu	Ala	Phe	Glu	Arg	Arg	His	Glu	Phe	Met	Ala	Leu	Cys		
			220					225				230					
atg	cgg	gac	ttc	gtg	gac	cac	tac	aac	ggc	tgg	atc	tgg	ggt	cac	cag	950	
Met	Arg	Asp	Phe	Val	Asp	His	Tyr	Asn	Gly	Trp	Ile	Trp	Gly	His	Gln		
			235					240				245					
ggc	ccg	cag	ctg	ctc	acg	cgg	gtc	ttc	aag	aag	tgg	tgt	tcc	atc	cgc	998	
Gly	Pro	Gln	Leu	Leu	Thr	Arg	Val	Phe	Lys	Lys	Trp	Cys	Ser	Ile	Arg		
			250				255			260				265			
agc	ctg	gcc	gag	agc	cgc	gcc	tgc	cgc	ggc	gtc	acc	acc	ctg	ccc	cct	1046	
Ser	Leu	Ala	Glu	Ser	Arg	Ala	Cys	Arg	Gly	Val	Thr	Thr	Leu	Pro	Pro		
				270					275					280			
gag	gcc	ttc	tac	ccc	atc	ccc	tgg	cag	gac	tgg	aag	aag	tac	ttt	gag	1094	
Glu	Ala	Phe	Tyr	Pro	Ile	Pro	Trp	Gln	Asp	Trp	Lys	Lys	Tyr	Phe	Glu		
				285				290					295				
gac	atc	aac	ccg	gag	gag	ctg	ccg	cgg	ctg	ctc	agt	gcc	acc	tat	gct	1142	
Asp	Ile	Asn	Pro	Glu	Glu	Leu	Pro	Arg	Leu	Leu	Ser	Ala	Thr	Tyr	Ala		
			300					305				310					
gtc	cac	gtg	tgg	aac	aag	aag	agc	cag	ggc	acg	cgg	ttc	gag	gcc	acg	1190	
Val	His	Val	Trp	Asn	Lys	Lys	Ser	Gln	Gly	Thr	Arg	Phe	Glu	Ala	Thr		
			315					320				325					
tcc	agg	gca	ctg	ctg	gcc	cag	ctg	cat	gcc	cgc	tac	tgc	ccc	acg	acg	1238	
Ser	Arg	Ala	Leu	Leu	Ala	Gln	Leu	His	Ala	Arg	Tyr	Cys	Pro	Thr	Thr		
			330				335			340				345			
cac	gag	gcc	atg	aaa	atg	tac	ttg	tga								1265	
His	Glu	Ala	Met	Lys	Met	Tyr	Leu	*									
				350													

<210> 515
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 <213> Homo sapiens

<220>
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 <222> (1) .. (1584)

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 Met Ala Lys Val Ile Leu Lys Gln Ser Lys Gln Cys Lys Asn Leu Leu
 1 5 10 15

acc tgc aaa gtg gcc cag gtc tgc ccc gta tgt ggc tgt ctt cat tgt 96
 Thr Cys Lys Val Ala Gln Val Cys Pro Val Cys Gly Cys Leu His Cys
 20 25 30

tat ttc tgg tgg ctc tca ggt ctt gag tca aga cgt ccc agc tct cca 144
 Tyr Phe Trp Trp Leu Ser Gly Leu Glu Ser Arg Arg Pro Ser Ser Pro
 35 40 45

ctc atc gat att aaa ccc atc gag ttt ggc gtt ctc agc gcc aag aag 192
 Leu Ile Asp Ile Lys Pro Ile Glu Phe Gly Val Leu Ser Ala Lys Lys
 50 55 60

gag ccc atc caa cct tcg gtg ctc aga cgg acc tat aac ccc gac gac 240
 Glu Pro Ile Gln Pro Ser Val Leu Arg Arg Thr Tyr Asn Pro Asp Asp
 65 70 75 80

tat ttc agg aag ttc gaa ccc cac ctg tac tcc ctc gac tcc aac agc 288
 Tyr Phe Arg Lys Phe Glu Pro His Leu Tyr Ser Leu Asp Ser Asn Ser
 85 90 95

gac gat gtg gac tct ctg aca gac gag gag atc ctg tcc aag tac cag 336
 Asp Asp Val Asp Ser Leu Thr Asp Glu Glu Ile Leu Ser Lys Tyr Gln
 100 105 110

ctg ggc atg ctg cac ttc agc act cag tac gac ctg ctg cac aac cac 384
 Leu Gly Met Leu His Phe Ser Thr Gln Tyr Asp Leu Leu His Asn His
 115 120 125

ctc acc gtg cgc gtg atc gag gcc agg gac ctg cca cct ccc atc tcc 432
 Leu Thr Val Arg Val Ile Glu Ala Arg Asp Leu Pro Pro Pro Ile Ser
 130 135 140

cac gat ggc tcg cgc cag gac atg gcg cac tcc aac ccc tac gtc aag 480
 His Asp Gly Ser Arg Gln Asp Met Ala His Ser Asn Pro Tyr Val Lys
 145 150 155 160

atc tgt ctc ctg cca gac cag aag aac tca aag cag acc ggg gtc aaa 528
 Ile Cys Leu Leu Pro Asp Gln Lys Asn Ser Lys Gln Thr Gly Val Lys
 165 170 175

cgc aag acc cag aag ccc gtg ttt gag gag cgc tac acc ttc gag atc 576
 Arg Lys Thr Gln Lys Pro Val Phe Glu Glu Arg Tyr Thr Phe Glu Ile
 180 185 190

ccc ttc ctg gag gcc cag agg agg acc ctg ctc ctg acc gtg gtg gat 624
 Pro Phe Leu Glu Ala Gln Arg Arg Thr Leu Leu Leu Thr Val Val Asp
 195 200 205

ttt gat aag ttc tcc cgc cac tgt gtc att ggg aaa gtt tct gtg cct	672
Phe Asp Lys Phe Ser Arg His Cys Val Ile Gly Lys Val Ser Val Pro	
210 215 220	
ttg tgt gaa gtt gac ctg gtc aag ggc ggg cac tgg tgg aag gcg cat	720
Leu Cys Glu Val Asp Leu Val Lys Gly Gly His Trp Trp Lys Ala His	
225 230 235 240	
gat tcc cag ttc tca gca cca ggc ttg ccc gcc gat caa caa ttt ttc	768
Asp Ser Gln Phe Ser Ala Pro Gly Leu Pro Ala Asp Gln Gln Phe Phe	
245 250 255	
gcc gat ctg ttc agc ggc ctg gtg ctt aac ccg caa cta ctg ggg cgc	816
Ala Asp Leu Phe Ser Gly Leu Val Leu Asn Pro Gln Leu Leu Gly Arg	
260 265 270	
gtc tgg ttt gcc agc cag cct gcc tcg ttg ccg gtg ggc agt tta tgt	864
Val Trp Phe Ala Ser Gln Pro Ala Ser Leu Pro Val Gly Ser Leu Cys	
275 280 285	
att gat ttt ccc cgt ctg gat atc gtg ctg cgc ggc gaa tac ggc aat	912
Ile Asp Phe Pro Arg Leu Asp Ile Val Leu Arg Gly Glu Tyr Gly Asn	
290 295 300	
ctg ctg gaa gca aag cag caa cgt ttg gtg gaa gga gaa atg ctg ttt	960
Leu Leu Glu Ala Lys Gln Gln Arg Leu Val Glu Gly Glu Met Leu Phe	
305 310 315 320	
att ccg gcg cgc gcg gct aat tta ccg gtc aac aac aaa ccg gtg atg	1008
Ile Pro Ala Arg Ala Ala Asn Leu Pro Val Asn Asn Lys Pro Val Met	
325 330 335	
ctg tta agc ctg gtg ttc gct ccg acc tgg ctt ggg tta tcg ttt tac	1056
Leu Leu Ser Leu Val Phe Ala Pro Thr Trp Leu Gly Leu Ser Phe Tyr	
340 345 350	
gat agc cgc acc acg tcg ttg ttg cat cct gct cgc cag atc cag ctt	1104
Asp Ser Arg Thr Thr Ser Leu Leu His Pro Ala Arg Gln Ile Gln Leu	
355 360 365	
ccc agc ctg caa cgc ggt gaa ggt gaa gcg atg ctt acc gcc ctc acc	1152
Pro Ser Leu Gln Arg Gly Glu Gly Glu Ala Met Leu Thr Ala Leu Thr	
370 375 380	
cat ctt agc cgt tcg ccg ctg gag caa aat atc att cag ccg ctg gtg	1200
His Leu Ser Arg Ser Pro Leu Glu Gln Asn Ile Ile Gln Pro Leu Val	
385 390 395 400	
tta agt ttg ctg cat ctt tgc cgt agc gtg gtg aat atg ccg ccg ggc	1248
Leu Ser Leu Leu His Leu Cys Arg Ser Val Val Asn Met Pro Pro Gly	
405 410 415	
aat tcg cag ccg cgc ggc gat ttt ctc tat cac agc att tgt aac tgg	1296
Asn Ser Gln Pro Arg Gly Asp Phe Leu Tyr His Ser Ile Cys Asn Trp	
420 425 430	
gtt cag gat aat tat gcc cag ccg ctc acc cgc gag agc gtg gcg cag	1344
Val Gln Asp Asn Tyr Ala Gln Pro Leu Thr Arg Glu Ser Val Ala Gln	
435 440 445	
ttt ttt aat atc acg ccc aat cat ctg tca aaa ctg ttt gct cag cat	1392
Phe Phe Asn Ile Thr Pro Asn His Leu Ser Lys Leu Phe Ala Gln His	
450 455 460	

gga acg atg cgt ttt atc gag tat gtg cgt tgg gtg cga atg gcg aag 1440
 Gly Thr Met Arg Phe Ile Glu Tyr Val Arg Trp Val Arg Met Ala Lys
 465 470 475 480
 gcg agg atg att ttg cag aaa tat cat ctg tca att cat gaa gtg gca 1488
 Ala Arg Met Ile Leu Gln Lys Tyr His Leu Ser Ile His Glu Val Ala
 485 490 495
 cag cgt tgc ggt ttt ccg gat agc gac tat ttt tgt cgc gtt ttc cgg 1536
 Gln Arg Cys Gly Phe Pro Asp Ser Asp Tyr Phe Cys Arg Val Phe Arg
 500 505 510
 cgt cag ttt ggt ctg acg ccg gga gag tac agc gcc cgt ttt cag ggc 1584
 Arg Gln Phe Gly Leu Thr Pro Gly Glu Tyr Ser Ala Arg Phe Gln Gly
 515 520 525
 taacgtcaga aggttaattc tgtttccagc agcgtcagga tactttgtgc atcttgcgcg 1644
 gcaaacaacg actggcggaa gtttttattc accagtttac gcgccagctg cgagaagact 1704
 ttcacatgat tcatcccttc gttagcacc cagcgtcagca tgatcaccag ttcgacttcg 1764
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 c 1825

<210> 516
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 <213> Homo sapiens

<220>
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 agaggcatca attggcttcg gacccaaggg ggagacgaga ccaggtcacc ccggttaaga 180
 ccaagtgagc gttgcccctc cctctcccaa ctctctaccc ggga atg tct cgg cga 236
 Met Ser Arg Arg
 1
 aag cag cgg aaa ccc caa cag tta atc tcg gac tgc gaa ggt ccc agc 284
 Lys Gln Arg Lys Pro Gln Gln Leu Ile Ser Asp Cys Glu Gly Pro Ser
 5 10 15 20
 gcg tct gag aac ggt gat gct agc gag gag gat cac ccc caa gtc tgt 332
 Ala Ser Glu Asn Gly Asp Ala Ser Glu Glu Asp His Pro Gln Val Cys
 25 30 35
 gcc aag tgc tgc gca caa ttc act gac cca act gaa ttc ctc gcc cac 380
 Ala Lys Cys Cys Ala Gln Phe Thr Asp Pro Thr Glu Phe Leu Ala His
 40 45 50
 cag aac gca tgt tct act gac cct cct gta atg gtg ata att ggg ggc 428
 Gln Asn Ala Cys Ser Thr Asp Pro Pro Val Met Val Ile Ile Gly Gly

55	60	65	
cag gag aac ccc aac aac tct tcg gcc tcc tct gaa ccc cgg cct gag Gln Glu Asn Pro Asn Asn Ser Ser Ala Ser Ser Glu Pro Arg Pro Glu 70 75 80			476
ggt cac aat aat cct cag gtc atg gac aca gag cat agc aac ccc cca Gly His Asn Asn Pro Gln Val Met Asp Thr Glu His Ser Asn Pro Pro 85 90 95 100			524
gat tct ggg tcc tcc gtg ccc acg gat ccc acc tgg ggc cca gag agg Asp Ser Gly Ser Ser Val Pro Thr Asp Pro Thr Trp Gly Pro Glu Arg 105 110 115			572
aga gga gag gag tct tca ggg cat ttc ctg gtc gct gcc aca ggt aca Arg Gly Glu Glu Ser Ser Gly His Phe Leu Val Ala Ala Thr Gly Thr 120 125 130			620
gcg gct ggg gga ggc ggg ggc ctg atc ttg gcc agt ccc aag ctg gga Ala Ala Gly Gly Gly Gly Leu Ile Leu Ala Ser Pro Lys Leu Gly 135 140 145			668
gca acc cca tta cct cca gaa tcg acc cct gca ccc cct cct cct cca Ala Thr Pro Leu Pro Pro Glu Ser Thr Pro Ala Pro Pro Pro Pro Pro 150 155 160			716
cca ccc cct ccg ccc cca ggg gta ggc agt ggc cac ttg aat atc ccc Pro Pro Pro Pro Pro Gly Val Gly Ser Gly His Leu Asn Ile Pro 165 170 175 180			764
ctg atc ttg gaa gag cta cgg gtg ctg cag cag cgg cag atc cat cag Leu Ile Leu Glu Glu Leu Arg Val Leu Gln Gln Arg Gln Ile His Gln 185 190 195			812
atg cag atg act gag caa atc tgc agg cag gtg ctg ttg ctt ggc tcc Met Gln Met Thr Glu Gln Ile Cys Arg Gln Val Leu Leu Leu Gly Ser 200 205 210			860
tta ggc cag acg gtg ggt gcc cct gcc agt ccc tca gag cta cct ggg Leu Gly Gln Thr Val Gly Ala Pro Ala Ser Pro Ser Glu Leu Pro Gly 215 220 225			908
aca ggg act gcc tct tcc acc aag ccc cta cta ccc ctc ttc agc ccc Thr Gly Thr Ala Ser Ser Thr Lys Pro Leu Leu Pro Leu Phe Ser Pro 230 235 240			956
atc aag cct gtc caa acc agc aag aca ctg gca tct tcc tcc tcc tcc Ile Lys Pro Val Gln Thr Ser Lys Thr Leu Ala Ser Ser Ser Ser Ser 245 250 255 260			1004
tcc tct tcc tct tca ggg gca gaa acg ccc aag cag gcc ttc ttc cac Ser Ser Ser Ser Ser Gly Ala Glu Thr Pro Lys Gln Ala Phe Phe His 265 270 275			1052
ctt tac cac cca ctg ggg tca cag cat cct ttc tct gct gga ggg gtt Leu Tyr His Pro Leu Gly Ser Gln His Pro Phe Ser Ala Gly Gly Val 280 285 290			1100
ggg cga agc cac aaa ccc acc cct gcc cct tcc cca gcc ttg cca ggc Gly Arg Ser His Lys Pro Thr Pro Ala Pro Ser Pro Ala Leu Pro Gly 295 300 305			1148
agc aca gat cag ctg att gcc tcg cct cat ctg gca ttc cca agc acc Ser Thr Asp Gln Leu Ile Ala Ser Pro His Leu Ala Phe Pro Ser Thr 310 315 320			1196

310	315	320	
acg gga cta ctg gca gca cag tgt ctt ggg gca gcc cga ggc ctt gag Thr Gly Leu Leu Ala Ala Gln Cys Leu Gly Ala Ala Arg Gly Leu Glu 325 330 335 340			1244
gcc act gcc tcc cca ggg ctc ctg aag cca aag aat gga agt ggt gag Ala Thr Ala Ser Pro Gly Leu Leu Lys Pro Lys Asn Gly Ser Gly Glu 345 350 355			1292
ctg agc tac gga gaa gtg atg ggt ccc ttg gag aag cct ggt gga agg Leu Ser Tyr Gly Glu Val Met Gly Pro Leu Glu Lys Pro Gly Gly Arg 360 365 370			1340
cac aaa tgc cgc ttc tgt gcc aaa gta ttt ggc agt gac agt gcc ctg His Lys Cys Arg Phe Cys Ala Lys Val Phe Gly Ser Asp Ser Ala Leu 375 380 385			1388
cag atc cac ctt cgt tcc cac acg ggt gag agg ccc tat aag tgc aat Gln Ile His Leu Arg Ser His Thr Gly Glu Arg Pro Tyr Lys Cys Asn 390 395 400			1436
gtc tgt gga aac cgt ttt acc acc cgt ggc aac ctc aaa gtg cat ttc Val Cys Gly Asn Arg Phe Thr Thr Arg Gly Asn Leu Lys Val His Phe 405 410 415 420			1484
cac cgg cat cgt gag aag tac cca cat gtg cag atg aac cca cac cca His Arg His Arg Glu Lys Tyr Pro His Val Gln Met Asn Pro His Pro 425 430 435			1532
gta cca gag cac cta gac tat gtc att acc agc agt ggc ttg cct tat Val Pro Glu His Leu Asp Tyr Val Ile Thr Ser Ser Gly Leu Pro Tyr 440 445 450			1580
ggt atg tcc gtg cca cca gag aag gcc gag gag gag gca gcc act cca Gly Met Ser Val Pro Pro Glu Lys Ala Glu Glu Glu Ala Ala Thr Pro 455 460 465			1628
ggt gga ggg gtt gag cgc aag cct ctg gtg gcc tcc aca aca gca ctc Gly Gly Gly Val Glu Arg Lys Pro Leu Val Ala Ser Thr Thr Ala Leu 470 475 480			1676
agt gcc aca gag agc ctg act ctg ctc tcc acc agt gca ggc aca gcc Ser Ala Thr Glu Ser Leu Thr Leu Leu Ser Thr Ser Ala Gly Thr Ala 485 490 495 500			1724
acg gct cca gga ctc cct gct ttc aat aag ttt gtg ctc atg aaa gca Thr Ala Pro Gly Leu Pro Ala Phe Asn Lys Phe Val Leu Met Lys Ala 505 510 515			1772
gtg gaa ccc aag aat aaa gct gat gaa aac acc ccc cca ggg agt gag Val Glu Pro Lys Asn Lys Ala Asp Glu Asn Thr Pro Pro Gly Ser Glu 520 525 530			1820
ggc tca gcc atc agt gga gtg gca gaa agt agc acg gca act ctc atg Gly Ser Ala Ile Ser Gly Val Ala Glu Ser Ser Thr Ala Thr Leu Met 535 540 545			1868
caa cta agt aag ttg atg act tca cta cca agc tgg gca ctg ctt acc Gln Leu Ser Lys Leu Met Thr Ser Leu Pro Ser Trp Ala Leu Leu Thr 550 555 560			1916
aac cac ttc aag tcc act ggc agc ttc ccg ctt ccc cta tgt gct aga Asn His Phe Lys Ser Thr Gly Ser Phe Pro Leu Pro Leu Cys Ala Arg 565 570 575			1964

565	570	575	580	
gcc ttg ggg gcc tca ccc tct gag aca tca aag ctg cag caa ctg gta Ala Leu Gly Ala Ser Pro Ser Glu Thr Ser Lys Leu Gln Gln Leu Val	585	590	595	2012
gaa aag att gac cgg caa gga gct gtg gcg gtg acc tca gct gcc tca Glu Lys Ile Asp Arg Gln Gly Ala Val Ala Val Thr Ser Ala Ala Ser	600	605	610	2060
gga gcc ccc acc acc tct gcc cct gca cct tca tcc tca gcc tct tct Gly Ala Pro Thr Thr Ser Ala Pro Ala Pro Ser Ser Ser Ala Ser Ser	615	620	625	2108
gga cct aac cag tgt gtc atc tgt ctc cga gtg ctt agc tgt cct cgg Gly Pro Asn Gln Cys Val Ile Cys Leu Arg Val Leu Ser Cys Pro Arg	630	635	640	2156
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ctc cct gaa ggt gga gga gct gct cag gag aat ggc tcc gag caa tct Leu Pro Glu Gly Gly Gly Ala Ala Gln Glu Asn Gly Ser Glu Gln Ser	725	730	735	2444
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cgg gag gga aaa gag gag gca gaa gag acg aat gtg ctg ccc aag gag Arg Glu Gly Lys Glu Glu Ala Glu Glu Thr Asn Val Leu Pro Lys Glu 1520 1525 1530	4607
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cta gca gag agc tca gac agc gag gag gat gag aag cca cac caa gcc Leu Ala Glu Ser Ser Asp Ser Glu Glu Asp Glu Lys Pro His Gln Ala 1570 1575 1580	4751
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Tyr Glu Lys Gln His Gly Thr Glu Lys Asp Val Gln Ala Val Lys Ala	
1855 1860 1865 1870	
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Lys Ala Leu Glu Tyr Val Glu Ala Lys Ser Ser Val Leu Glu Asp *	
1875 1880 1885	
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	Met Asp Asp Ala Thr
	1 5
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Val Leu Arg Lys Lys Gly Tyr Ile Val Gly Ile Asn Leu Gly Lys Gly	
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Ser Tyr Ala Lys Val Lys Ser Ala Tyr Ser Glu Arg Leu Lys Phe Asn	
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Val Ala Val Lys Ile Ile Asp Arg Lys Lys Thr Pro Thr Asp Phe Val	
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Glu Arg Phe Leu Pro Arg Glu Met Asp Ile Leu Ala Thr Val Asn His	
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Gly Ser Ile Ile Lys Thr Tyr Glu Ile Phe Glu Thr Ser Asp Gly Arg	
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Ile Tyr Ile Ile Met Glu Leu Gly Val Gln Gly Asp Leu Leu Glu Phe	
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Ile Lys Cys Gln Gly Ala Leu His Glu Asp Val Ala Arg Lys Met Phe	
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cga cag ctc tcc tcc gcc gtc aag tac tgc cac gac ctg gac atc gtc	1519
Arg Gln Leu Ser Ser Ala Val Lys Tyr Cys His Asp Leu Asp Ile Val	
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His Arg Asp Leu Lys Cys Glu Asn Leu Leu Leu Asp Lys Asp Phe Asn	
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Ile Lys Leu Ser Asp Phe Gly Phe Ser Lys Arg Cys Leu Arg Asp Ser	
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Asn Gly Arg Ile Ile Leu Ser Lys Thr Phe Cys Gly Ser Ala Ala Tyr	
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gca gcc ccc gag gtg ctg cag agc atc ccc tac cag ccc aag gtg tat	1711
Ala Ala Pro Glu Val Leu Gln Ser Ile Pro Tyr Gln Pro Lys Val Tyr	
185 190 195	
gac atc tgg agc ctg ggc gtg atc ctg tac atc atg gtc tgc ggc tcc	1759
Asp Ile Trp Ser Leu Gly Val Ile Leu Tyr Ile Met Val Cys Gly Ser	
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Met Pro Tyr Asp Asp Ser Asp Ile Arg Lys Met Leu Arg Ile Gln Lys	
215 220 225	
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Glu His Arg Val Asp Phe Pro Arg Ser Lys Asn Leu Thr Cys Glu Cys	
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aag gac ctc atc tac cgc atg ctg cag ccc gac gtc agc cag cgg ctc	1903
Lys Asp Leu Ile Tyr Arg Met Leu Gln Pro Asp Val Ser Gln Arg Leu	
250 255 260	
cac atc gat gag atc ctc agc cac tcg tgg ctg cag ccc ccc aag ccc	1951
His Ile Asp Glu Ile Leu Ser His Ser Trp Leu Gln Pro Pro Lys Pro	
265 270 275	
aaa gcc acg tct tct gcc tcc ttc aag agg gag ggg gag ggc aag tac	1999
Lys Ala Thr Ser Ser Ala Ser Phe Lys Arg Glu Gly Glu Gly Lys Tyr	
280 285 290	
cgc gct gag tgc aaa ctg gac acc aag aca ggc ttg agg ccc gac cac	2047
Arg Ala Glu Cys Lys Leu Asp Thr Lys Thr Gly Leu Arg Pro Asp His	
295 300 305	
cgg ccc gac cac aag ctt gga gcc aaa acc cag cac cgg ctg ctg gtg	2095
Arg Pro Asp His Lys Leu Gly Ala Lys Thr Gln His Arg Leu Leu Val	
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Val Pro Glu Asn Glu Asn Arg Met Glu Asp Arg Leu Ala Glu Thr Ser	
330 335 340	
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Arg Ala Lys Asp His His Ile Ser Gly Ala Glu Val Gly Lys Ala Ser	
345 350 355	
acc tag catgacaatg gccccgttgt gtgtggtggg ggtcgggggtt ggggggcatg	2247
Thr *	
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 gggctcctag gaaggcacag ggctgtctgc tctgcagagg gctccagtgg aaaggaggga 180
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 cctgtgagga gcccgaagcc aacaaggcca cactggtgtg tctcatgaat aactttatcc 420
 gggaatcttg atg gtg acc tgg aag gca gat ggt acc ctc atc acc cag 469
 Met Val Thr Trp Lys Ala Asp Gly Thr Leu Ile Thr Gln
 1 5 10
 agc gtg gag aag acc acg ccc tcc aaa cag agc aac aac aag tac gtg 517
 Ser Val Glu Lys Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Val
 15 20 25
 gcc agc agc tac ctg agc ctg acg ccc gag cag tgg agg tcc cgc aga 565

Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Arg Ser Arg Arg
 30 35 40 45

agc tac agc tgc cag gtt atg caa gaa ggg agc acc gtg gag aag tca 613
 Ser Tyr Ser Cys Gln Val Met Gln Glu Gly Ser Thr Val Glu Lys Ser
 50 55 60

gtg gcc cct gca gaa tgt tca tag gttccagccc ccacccacac ccacaggggc 667
 Val Ala Pro Ala Glu Cys Ser *

65

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 Met His Pro Ala
 1

gct gaa gat aac tat ggt tat gat gcg tgt gct gta ctc tgc tta ccc 1003
 Ala Glu Asp Asn Tyr Gly Tyr Asp Ala Cys Ala Val Leu Cys Leu Pro

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tgt gtc ccc aat atc tta gtg atc gct act gaa tca gga atg ctg tat				1051
Cys Val Pro Asn Ile Leu Val Ile Ala Thr Glu Ser Gly Met Leu Tyr				
	25	30	35	
cac tgt gtc gtg cta gaa ggg gaa gaa gaa gat gac cac acg tca gaa				1099
His Cys Val Val Leu Glu Gly Glu Glu Glu Asp Asp His Thr Ser Glu				
	40	45	50	
aag tcc tgg gat tcc agg att gac ctc att cct tct ctg tat gtg ttt				1147
Lys Ser Trp Asp Ser Arg Ile Asp Leu Ile Pro Ser Leu Tyr Val Phe				
	55	60	65	
gaa tgt gtt gag ttg gag ctt gct ttg aaa ctg gca tct gga gag gat				1195
Glu Cys Val Glu Leu Glu Leu Ala Leu Lys Leu Ala Ser Gly Glu Asp				
	70	75	80	
gac cct ttt gat tct gac ttt tct tgt cca gtc aaa ctt cat aga gat				1243
Asp Pro Phe Asp Ser Asp Phe Ser Cys Pro Val Lys Leu His Arg Asp				
	85	90	95	100
ccc aag tgt cct tca aga tat cac tgt act cat gaa gct ggt gta cat				1291
Pro Lys Cys Pro Ser Arg Tyr His Cys Thr His Glu Ala Gly Val His				
	105	110	115	
agt gtt ggg cta act tgg att cat aaa ctt cac aaa ttt ctt gga tca				1339
Ser Val Gly Leu Thr Trp Ile His Lys Leu His Lys Phe Leu Gly Ser				
	120	125	130	
gat gaa gaa gat aag gat agt tta cag gaa ctc tct aca gaa cag aaa				1387
Asp Glu Glu Asp Lys Asp Ser Leu Gln Glu Leu Ser Thr Glu Gln Lys				
	135	140	145	
tgc ttt gtt gaa cac atc ctt tgt acg agg cca ttg ccc tgc agg cag				1435
Cys Phe Val Glu His Ile Leu Cys Thr Arg Pro Leu Pro Cys Arg Gln				
	150	155	160	
cca gct cca att cga gga ttt tgg att gta cct gac att ctg gga ccc				1483
Pro Ala Pro Ile Arg Gly Phe Trp Ile Val Pro Asp Ile Leu Gly Pro				
	165	170	175	180
acg atg atc tgc atc acc agt acc tat gaa tgc ctc ata tgg ccg tta				1531
Thr Met Ile Cys Ile Thr Ser Thr Tyr Glu Cys Leu Ile Trp Pro Leu				
	185	190	195	
tta agt aca gtc cat cca gcg tct cct ccc ctg ctt tgt act cga gaa				1579
Leu Ser Thr Val His Pro Ala Ser Pro Pro Leu Leu Cys Thr Arg Glu				
	200	205	210	
gat gtt gaa gtg gca gag tct ccc ctc cgt gtt ctg gct gaa acc cca				1627
Asp Val Glu Val Ala Glu Ser Pro Leu Arg Val Leu Ala Glu Thr Pro				
	215	220	225	
gat tcc ttt gaa aag cat att aga agc att ttg caa cgt agt gtt gcc				1675
Asp Ser Phe Glu Lys His Ile Arg Ser Ile Leu Gln Arg Ser Val Ala				
	230	235	240	
aat cca gca ttt ttg aaa gct tct gaa aag gac ata gcc cct cct cct				1723
Asn Pro Ala Phe Leu Lys Ala Ser Glu Lys Asp Ile Ala Pro Pro Pro				
	245	250	255	260
gaa gaa tgc ctt cag ctc ctc agc aga gcc acc cag gtg ttc aga gag				1771
Glu Glu Cys Leu Gln Leu Leu Ser Arg Ala Thr Gln Val Phe Arg Glu				

	265	270	275	
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Gln Tyr Ile Leu Lys Gln Asp Leu Ala Lys Glu Glu Ile Gln Arg Arg				
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gtc aaa tta tta tgt gac caa aaa aag aaa caa cta gaa gat ctc agt				1867
Val Lys Leu Leu Cys Asp Gln Lys Lys Lys Gln Leu Glu Asp Leu Ser				
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tat tgt cga gaa gag agg aaa agt ctg cgg gaa atg gct gag cgt tta				1915
Tyr Cys Arg Glu Glu Arg Lys Ser Leu Arg Glu Met Ala Glu Arg Leu				
	310	315	320	
gct gac aaa tat gag gaa gct aaa gaa aaa caa gag gat atc atg aac				1963
Ala Asp Lys Tyr Glu Glu Ala Lys Glu Lys Gln Glu Asp Ile Met Asn				
	325	330	335	340
agg atg aaa aaa cta ctt cac agt ttt cac tct gag ctc cca gtt ctc				2011
Arg Met Lys Lys Leu Leu His Ser Phe His Ser Glu Leu Pro Val Leu				
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tct gat agt gag cga gac atg aag aaa gaa tta cag ctg ata cct gat				2059
Ser Asp Ser Glu Arg Asp Met Lys Lys Glu Leu Gln Leu Ile Pro Asp				
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caa ctt cga cat ttg ggc aat gcc atc aaa cag gtt act atg aaa aag				2107
Gln Leu Arg His Leu Gly Asn Ala Ile Lys Gln Val Thr Met Lys Lys				
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gat tat caa cag caa aag atg gag aag gtg ttg agt ctt cca aaa ccc				2155
Asp Tyr Gln Gln Gln Lys Met Glu Lys Val Leu Ser Leu Pro Lys Pro				
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acc att att ctc agt gcc tac cag cga aag tgc att cag tcc atc ctg				2203
Thr Ile Ile Leu Ser Ala Tyr Gln Arg Lys Cys Ile Gln Ser Ile Leu				
	405	410	415	420
aaa gag gag ggt gaa cat ata agg gaa atg gtg aag caa atc aat gat				2251
Lys Glu Glu Gly Glu His Ile Arg Glu Met Val Lys Gln Ile Asn Asp				
	425	430	435	
atc cgc aat cat gta aac ttc tga caccaccagg agctgactca cacctgaact				2305
Ile Arg Asn His Val Asn Phe *				
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Asn His Val Val Phe Leu Arg Leu Arg Glu Gly Leu Lys Asn Gln Ser	
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Pro Thr Glu Ala Glu Lys Pro Ala Ser Ser Ser Leu Pro Ser Ser Pro	
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Pro Pro Gln Leu Leu Thr Arg Asn Val Val Phe Gly Leu Gly Gly Glu	
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Leu Phe Leu Trp Asp Gly Glu Asp Ser Ser Phe Leu Val Val Arg Leu	
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aga ttg ctt tgc ata aat cca ccc ctg ttt gaa atc tat caa gtc ttg	393
Arg Leu Leu Cys Ile Asn Pro Pro Leu Phe Glu Ile Tyr Gln Val Leu	
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tta agc cca aca caa cat cat gta gca ctt ata gga ata aaa gga ctt	441
Leu Ser Pro Thr Gln His His Val Ala Leu Ile Gly Ile Lys Gly Leu	
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Met Val Leu Glu Leu Pro Lys Arg Trp Gly Lys Asn Ser Glu Phe Glu	
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Gly Gly Lys Ser Thr Val Asn Cys Ser Thr Thr Pro Val Ala Glu Arg	
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Phe Phe Thr Ser Ser Thr Ser Leu Thr Leu Lys His Ala Ala Trp Tyr	
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Pro Ser Glu Ile Leu Asp Pro His Val Val Leu Leu Thr Ser Asp Asn	
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Ile Ile Leu Ser Glu Ala Glu Glu Glu Ser Leu Val Leu Asn Lys Gly	
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Arg Ala Tyr Thr Ala Ser Leu Gly Glu Thr Ala Val Ala Phe Asp Phe	
230 235 240	
ggg cca ttg gca gca gtc cca aag act cta ttt gga caa aac ggc aaa	825

Gly	Pro	Leu	Ala	Ala	Val	Pro	Lys	Thr	Leu	Phe	Gly	Gln	Asn	Gly	Lys	
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Asp	Glu	Val	Val	Ala	Tyr	Pro	Leu	Tyr	Ile	Leu	Tyr	Glu	Asn	Gly	Glu	
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act	ttc	ctg	aca	tac	atc	agt	ctg	tta	cac	agc	cct	gga	aat	att	tgg	921
Thr	Phe	Leu	Thr	Tyr	Ile	Ser	Leu	Leu	His	Ser	Pro	Gly	Asn	Ile	Trp	
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Lys	Ala	Val	Gly	Ser	Ile	Ala	His	Ala	Ser	Cys	Gly	*				
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actcacacct	gaactgaaca	ccattgaagg	cttaaaccce	tattgtaaaa	caggtagaat											2350
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 gaggggaaccc gagcgtcatg ttaggggtgaa gcagaggacc tcagtgtctga ac atg 175
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 Leu Arg Arg Leu Asp Lys Ile Arg Phe Arg Gly His Lys Arg Asp Asp
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 ttc ctc gat cta gcg gag tct cca aat gcc tcg gac acc gaa tgc agc 271
 Phe Leu Asp Leu Ala Glu Ser Pro Asn Ala Ser Asp Thr Glu Cys Ser
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 gac gaa atc ccc ctg aag gta ccg cgg acc tcg ccc cgg gac agc gag 319
 Asp Glu Ile Pro Leu Lys Val Pro Arg Thr Ser Pro Arg Asp Ser Glu
 35 40 45
 gag ctg agg gac cct gct ggt cca ggg acc ctc atc atg gcc aca gga 367
 Glu Leu Arg Asp Pro Ala Gly Pro Gly Thr Leu Ile Met Ala Thr Gly
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 gtc cag gac ttt aac cgg aca gag ttt gat cga ctg aat gag atc aaa 415
 Val Gln Asp Phe Asn Arg Thr Glu Phe Asp Arg Leu Asn Glu Ile Lys
 70 75 80
 ggt cac ctg gaa att gcc tta ttg gaa aaa cat ttc tta cag gag gag 463
 Gly His Leu Glu Ile Ala Leu Leu Glu Lys His Phe Leu Gln Glu Glu
 85 90 95
 ctc cgg aag ctg cga gaa gaa acc aac gcg gag atg ctg cgg cag gag 511
 Leu Arg Lys Leu Arg Glu Glu Thr Asn Ala Glu Met Leu Arg Gln Glu
 100 105 110
 ctg gac cgc gag cgg cag cgg cgg atg gag ctg gag cag aag gtg cag 559
 Leu Asp Arg Glu Arg Gln Arg Arg Met Glu Leu Glu Gln Lys Val Gln
 115 120 125
 gag gtg ctg aag gcc aga acc gag gag cag atg gct cag cag ccc cca 607
 Glu Val Leu Lys Ala Arg Thr Glu Glu Gln Met Ala Gln Gln Pro Pro
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 Lys Gly Gln Ala Gln Ala Ser Asn Gly Ala Glu Arg Arg Ser Gln Gly
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tcc gac tgg tac tcc gtc tac acg tct gcc att gcc ttc acc gtg tac Ser Asp Trp Tyr Ser Val Tyr Thr Ser Ala Ile Ala Phe Thr Val Tyr 230 235 240	895
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gcc cag aaa gcc cag aac ctt ttc ggg aag atg gct gac atc ctg gag Ala Gln Lys Ala Gln Asn Leu Phe Gly Lys Met Ala Asp Ile Leu Glu 310 315 320	1135
aag atc aag aac ttg ttc atg tgg gtc cag ccg gag atc aca cag aag Lys Ile Lys Asn Leu Phe Met Trp Val Gln Pro Glu Ile Thr Gln Lys 325 330 335	1183
ctg tat gtg gcg ctc tgg gct gcc ttc ctg gcc tcc tgc ttc ttc ccc Leu Tyr Val Ala Leu Trp Ala Ala Phe Leu Ala Ser Cys Phe Phe Pro 340 345 350	1231
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Ile Phe Asn Leu Thr Glu Asn Glu Arg Pro Leu Ala Val Cys Glu Asn	
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Gly Trp Arg Cys Cys Leu Ile Asn Arg Asp Arg Lys Met Pro Thr Asp	
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Tyr Ile Arg Asn Gly Val Leu Tyr Val Thr Glu Asn Tyr Leu Cys Phe	
485 490 495	
gaa agc tcc aaa tct ggg tcc tca aag agg aac aaa gtc atc aag cta	1711
Glu Ser Ser Lys Ser Gly Ser Ser Lys Arg Asn Lys Val Ile Lys Leu	
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Val Asp Ile Thr Asp Ile Gln Lys Tyr Lys Val Leu Ser Val Leu Pro	
515 520 525	
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Gly Ser Gly Met Gly Ile Ala Val Ser Thr Pro Ser Thr Gln Lys Pro	
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Leu Val Phe Gly Ala Met Val His Arg Asp Glu Ala Phe Glu Thr Ile	
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 Arg Arg Asn Leu Glu Glu Asp Asp Tyr Leu His Lys Asp Thr Gly Glu
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 Thr Ser Met Leu Lys Arg Pro Val Leu Leu His Leu His Gln Thr Ala
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 His Ala Asp Glu Phe Asp Cys Pro Ser Glu Leu Gln His Thr Gln Glu
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 Leu Phe Pro Gln Trp His Leu Pro Ile Lys Ile Ala Ala Ile Ile Ala
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 Ser Leu Thr Phe Leu Tyr Thr Leu Leu Arg Glu Val Ile His Pro Leu
 85 90 95
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 Ala Thr Ser His Gln Gln Tyr Phe Tyr Lys Ile Pro Ile Leu Val Ile
 100 105 110
 aac aaa gtc ttg cca atg gtt tcc atc act ctc ttg gca ttg gtt tac 559
 Asn Lys Val Leu Pro Met Val Ser Ile Thr Leu Leu Ala Leu Val Tyr
 115 120 125 130
 ctg cca ggt gtg ata gca gca att gtc caa ctt cat aat gga acc aag 607
 Leu Pro Gly Val Ile Ala Ala Ile Val Gln Leu His Asn Gly Thr Lys
 135 140 145
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 Tyr Lys Lys Phe Pro His Trp Leu Asp Lys Trp Met Leu Thr Arg Lys
 150 155 160
 cag ttt ggg ctt ctc agt ttc ttt ttt gct gta ctg cat gca att tat 703
 Gln Phe Gly Leu Leu Ser Phe Phe Phe Ala Val Leu His Ala Ile Tyr
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 Ser Leu Ser Tyr Pro Met Arg Arg Ser Tyr Arg Tyr Lys Leu Leu Asn
 180 185 190

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Trp Ala Tyr Gln Gln Val Gln Gln Asn Lys Glu Asp Ala Trp Ile Glu	
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His Asp Val Trp Arg Met Glu Ile Tyr Val Ser Leu Gly Ile Val Gly	
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Leu Ala Ile Leu Ala Leu Leu Ala Val Thr Ser Ile Pro Ser Val Ser	
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Asp Ser Leu Thr Trp Arg Glu Phe His Tyr Ile Gln Ser Lys Leu Gly	
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Asn Lys Trp Ile Asp Ile Lys Gln Phe Val Trp Tyr Thr Pro Pro Thr	
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Phe Met Ile Ala Val Phe Leu Pro Ile Val Val Leu Ile Phe Lys Ser	
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Gly Trp Glu Asp Val Thr Lys Ile Asn Lys Thr Glu Ile Cys Ser Gln	
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Leu *	
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Met Phe Leu His Pro Val	
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gac tat ggg aga aag gct gag gag ctg ctg tgg aga aag gta tac tat	403
Asp Tyr Gly Arg Lys Ala Glu Glu Leu Leu Trp Arg Lys Val Tyr Tyr	
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Glu Val Ile Gln Leu Ile Lys Thr Asn Lys Lys His Ile His Ser Arg	
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Ser Thr Leu Glu Cys Ala Tyr Arg Thr His Leu Val Ala Gly Ile Gly	
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Phe Tyr Gln His Leu Leu Leu Tyr Ile Gln Ser His Tyr Gln Leu Glu	
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Leu Gln Cys Cys Ile Asp Trp Thr His Val Thr Asp Pro Leu Ile Gly	
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tgc aag aag cca gtg tct gcc tca ggg aag gag atg gat tgg gca cag	643
Cys Lys Lys Pro Val Ser Ala Ser Gly Lys Glu Met Asp Trp Ala Gln	
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Met Ala Cys His Arg Cys Leu Val Tyr Leu Gly Asp Leu Ser Arg Tyr	
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Gln Asn Glu Leu Ala Gly Val Asp Thr Glu Leu Leu Ala Glu Arg Phe	
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Tyr Tyr Gln Ala Leu Ser Val Ala Pro Gln Ile Gly Met Pro Phe Asn	
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Tyr Gly Asn Leu Lys Arg Leu Tyr Asp Lys Ala Ala Lys Met Tyr His	
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Gln Leu Lys Lys Cys Glu Thr Arg Lys Leu Ser Pro Gly Lys Lys Arg	
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Cys Lys Asp Ile Lys Arg Leu Leu Val Asn Phe Met Tyr Leu Gln Ser	
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Leu Leu Gln Pro Lys Ser Ser Ser Val Asp Ser Glu Leu Thr Ser Leu	

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Ser	Ser	Pro	Asn	Leu	Ser	Leu	Ala	Ser	Glu	Asp	Glu	Glu	Glu	Tyr	Glu	
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Ser	Gly	Tyr	Ala	Phe	Leu	Pro	Asp	Leu	Leu	Ile	Phe	Gln	Met	Val	Ile	
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Ile	Cys	Leu	Met	Cys	Val	His	Ser	Leu	Glu	Arg	Ala	Gly	Ser	Lys	Gln	
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Tyr	Ser	Ala	Ala	Ile	Ala	Phe	Thr	Leu	Ala	Leu	Phe	Ser	His	Leu	Val	
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Asn	His	Val	Asn	Ile	Arg	Leu	Gln	Ala	Glu	Leu	Glu	Glu	Gly	Glu	Asn	
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Thr	Pro	Gln	Val	Gly	Glu	Gly	Arg	Lys	Ser	Arg	Lys	Phe	Ser	Arg	Leu	
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Ser	Cys	Leu	Arg	Arg	Arg	Arg	His	Pro	Pro	Lys	Val	Gly	Asp	Asp	Ser	
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Asp	Leu	Ser	Glu	Gly	Phe	Glu	Ser	Asp	Ser	Ser	His	Asp	Ser	Ala	Arg	
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Ala	Ser	Glu	Gly	Ser	Asp	Ser	Gly	Ser	Asp	Lys	Ser	Leu	Glu	Gly	Gly	
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Ser	Arg	Ser	Asp	Leu	Glu	Asp	Met	Glu	Glu	Glu	Glu	Gly	Thr	Arg	Ser	
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Pro	Thr	Leu	Glu	Pro	Pro	Arg	Gly	Arg	Ser	Glu	Ala	Pro	Asp	Ser	Leu	
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ccc acc ttt agc aac ctg ctc ctc cag ccc acc acc aac cct cat acc Pro Thr Phe Ser Asn Leu Leu Leu Gln Pro Thr Thr Asn Pro His Thr 520 525 530			1939
tcg gcc agc cac agg cct tgc gtc aat ggg gat gta gac aag cct tca Ser Ala Ser His Arg Pro Cys Val Asn Gly Asp Val Asp Lys Pro Ser 535 540 545 550			1987
gag cca gcc tct gag gag ggc tct gag tcg gag ggg agt gag tcc agt Glu Pro Ala Ser Glu Glu Gly Ser Glu Ser Glu Gly Ser Glu Ser Ser 555 560 565			2035
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cca gag gac atg gct ctt cgt aac ctg ccc ccg ctc cga gct gcc cac Pro Glu Asp Met Ala Leu Arg Asn Leu Pro Pro Leu Arg Ala Ala His 665 670 675			2371
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gag tca gtg gtg cgc atc tgc tgc atc cgc agc ttt ggt cat ttc atc Glu Ser Val Val Arg Ile Cys Cys Ile Arg Ser Phe Gly His Phe Ile 695 700 705 710			2467
gcc cgc ctg caa ggc agc atc ctg cag ttc aac cca gag gtt ggc atc Ala Arg Leu Gln Gly Ser Ile Leu Gln Phe Asn Pro Glu Val Gly Ile 715 720 725			2515
ttc gtc agc att gcc cag tct gag cag gag agc ctg ctg cag cag gcc Phe Val Ser Ile Ala Gln Ser Glu Gln Glu Ser Leu Leu Gln Gln Ala 730 735 740			2563
cag gca cag ttc cga atg gca cag gag gaa gct cgt cgg aac agg ctc Gln Ala Gln Phe Arg Met Ala Gln Glu Glu Ala Arg Arg Asn Arg Leu 745 750 755 760			2611

745	750	755	
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 gacaata atg gtt ttt ggt acc aaa ttc cca gag agt aaa ata gtt ctg 229
 Met Val Phe Gly Thr Lys Phe Pro Glu Ser Lys Ile Val Leu
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 gcc tta aga act aaa cgg gaa ggc cct ggg gaa gtt agg att caa gtt 277
 Ala Leu Arg Thr Lys Arg Glu Gly Pro Gly Glu Val Arg Ile Gln Val
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 Tyr Ala Leu Arg Ile Gly Glu Asn Glu Asn Thr Asp Arg Glu Arg Asp
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Arg	Glu	Arg	Arg	Gly	Tyr	Ser	Val	Pro	Pro	Arg	Pro	Glu	Val	Arg	Thr		
		65					70					75					
cag	gcc	acg	gag	tgg	aga	gta	gaa	gaa	tct	aac	ttc	aac	aag	atc	ttc	469	
Gln	Ala	Thr	Glu	Trp	Arg	Val	Glu	Glu	Ser	Asn	Phe	Asn	Lys	Ile	Phe		
	80					85					90						
ctg	aaa	aaa	gac	gct	gag	ctt	gga	cgg	tcc	aac	cac	ctc	cct	acc	tgg	517	
Leu	Lys	Lys	Asp	Ala	Glu	Leu	Gly	Arg	Ser	Asn	His	Leu	Pro	Thr	Trp		
	95				100					105					110		
gat	aag	ccg	gag	gat	gct	tct	tgg	ctt	ccc	caa	agc	tgt	ctt	ggt	ggt	565	
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Thr	Arg	Ala	Leu	Glu	Val	Gly	Gln	Pro	Ala	Gln	Arg	Asp	Ile	Arg	Arg		
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Lys	Tyr	Gln	Val	Ser	Glu	Glu	Val	Pro	Ser	Gly	Thr	Val	Ile	Gly	Lys		
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ctg	tcc	cag	gaa	ctg	ggc	cgg	gag	gag	agg	cgg	agg	caa	gct	ggg	gct	901	
Leu	Ser	Gln	Glu	Leu	Gly	Arg	Glu	Glu	Arg	Arg	Arg	Gln	Ala	Gly	Ala		
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gcc	ttc	cag	gtg	ttg	cag	ctg	cct	cag	gcg	ctc	ccc	att	cag	gtg	gac	949	
Ala	Phe	Gln	Val	Leu	Gln	Leu	Pro	Gln	Ala	Leu	Pro	Ile	Gln	Val	Asp		
	240					245					250						
tct	gag	gaa	ggc	ttg	ctc	agc	aca	ggc	agg	cgg	ctg	gat	cga	gag	cag	997	
Ser	Glu	Glu	Gly	Leu	Leu	Ser	Thr	Gly	Arg	Arg	Leu	Asp	Arg	Glu	Gln		
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ctg	tgc	cga	cag	tgg	gat	ccc	tgc	ctg	gtt	tcc	ttt	gat	gtg	ctt	gcc	1045	
Leu	Cys	Arg	Gln	Trp	Asp	Pro	Cys	Leu	Val	Ser	Phe	Asp	Val	Leu	Ala		
				275					280					285			
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Thr	Gly	Asp	Leu	Ala	Leu	Ile	His	Val	Glu	Ile	Gln	Val	Leu	Asp	Ile		
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Ser	Glu	Ser	Ala	Ser	Leu	Arg	Thr	Arg	Ile	Pro	Leu	Asp	Arg	Ala	Leu		
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gac	cca	gac	aca	ggc	cct	aac	acc	ctg	cac	acc	tac	act	ctg	tct	ccc		1237
Asp	Pro	Asp	Thr	Gly	Pro	Asn	Thr	Leu	His	Thr	Tyr	Thr	Leu	Ser	Pro		
		335			340					345					350		
agt	gag	cac	ttt	gcc	ttg	gat	gtc	att	gtg	ggc	cct	gat	gag	acc	aaa		1285
Ser	Glu	His	Phe	Ala	Leu	Asp	Val	Ile	Val	Gly	Pro	Asp	Glu	Thr	Lys		
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cat	gca	gaa	ctc	ata	gtg	gtg	aag	gag	ctg	gac	agg	gaa	atc	cat	tca		1333
His	Ala	Glu	Leu	Ile	Val	Val	Lys	Glu	Leu	Asp	Arg	Glu	Ile	His	Ser		
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Met Ala Ala Thr Glu Pro Ile Leu Ala Ala Thr Gly Ser Pro Ala Ala
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Val His Arg Arg Asn Trp Lys Glu Pro Val Arg Ala Gln Pro Leu Ser
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Val Thr Val Trp Ala Pro Arg Cys Gln Arg Pro His Arg Leu Pro Leu
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aaaaaaaa																908

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			Met Ala Val Gly Leu Cys Lys Ala													
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atg tcc cag ggg ttg gtg acc ttc aga gat gtg gcg cta gac ttt tcc																281
Met Ser Gln Gly Leu Val Thr Phe Arg Asp Val Ala Leu Asp Phe Ser																
10					15					20						
caa gaa gag tgg gaa tgg ctg aag cca tct cag aag gat tta tac aga																329
Gln Glu Glu Trp Glu Trp Leu Lys Pro Ser Gln Lys Asp Leu Tyr Arg																
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gat gtc atg ttg gag aac tac agg aac ttg gta tgg ctt gga ctc tcc																377
Asp Val Met Leu Glu Asn Tyr Arg Asn Leu Val Trp Leu Gly Leu Ser																
				45					50					55		
att tct aag ccc aac atg atc tcc tta ctg gag caa ggg aag gaa ccg																425
Ile Ser Lys Pro Asn Met Ile Ser Leu Leu Glu Gln Gly Lys Glu Pro																
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Trp Met Val Glu Arg Lys Met Ser Gln Gly His Cys Ala Asp Trp Glu																

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gat gaa ata tcc cag gag atg gta atg gaa agg cta gca agt cat ggc Asp Glu Ile Ser Gln Glu Met Val Met Glu Arg Leu Ala Ser His Gly 105 110 115 120			569
ctt gaa tgc tcc agt ttc aga gaa gcc tgg aaa tat aag ggt gaa ttt Leu Glu Cys Ser Ser Phe Arg Glu Ala Trp Lys Tyr Lys Gly Glu Phe 125 130 135			617
gag cta cat cag gga aat gcg gag agg cat ttc atg caa gtg aca gct Glu Leu His Gln Gly Asn Ala Glu Arg His Phe Met Gln Val Thr Ala 140 145 150			665
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cag acc act cat ttt gga aaa tta ccc cat gga tac gat gaa tgt ggt Gln Thr Thr His Phe Gly Lys Leu Pro His Gly Tyr Asp Glu Cys Gly 265 270 275 280			1049
gat gcc ttt agc tgt tac tca ttc ttt act caa cct cag aga att cac Asp Ala Phe Ser Cys Tyr Ser Phe Phe Thr Gln Pro Gln Arg Ile His 285 290 295			1097
agt gga gaa aaa cca tat gca tgc aat gac tgt gga aaa gcc ttt agc Ser Gly Glu Lys Pro Tyr Ala Cys Asn Asp Cys Gly Lys Ala Phe Ser 300 305 310			1145
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aaa gcc ttc aga cag agt gct cac ctt aat caa cat cag agg att cac Lys Ala Phe Arg Gln Ser Ala His Leu Asn Gln His Gln Arg Ile His 395 400 405			1433
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aga cgc ata gcc ctt act cta cat caa aga att cac aca gga gag aaa Arg Arg Ile Ala Leu Thr Leu His Gln Arg Ile His Thr Gly Glu Lys 425 430 435 440			1529
ccc ttc aaa tgt agt gaa tgt ggg aag acc ttt ggc tat cgc tca cac Pro Phe Lys Cys Ser Glu Cys Gly Lys Thr Phe Gly Tyr Arg Ser His 445 450 455			1577
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cat aga att cac act gga gag aga cca ttt gaa tgc agt aaa tgt ggg His Arg Ile His Thr Gly Glu Arg Pro Phe Glu Cys Ser Lys Cys Gly 490 495 500			1721
aaa gcc ttc agt gat gct tta gtt cta att cac cat aag aga agt cat Lys Ala Phe Ser Asp Ala Leu Val Leu Ile His His Lys Arg Ser His 505 510 515 520			1769
gca gga gag aaa ccc tat gaa tgt aac aaa tgt gga aag gcc ttc agt Ala Gly Glu Lys Pro Tyr Glu Cys Asn Lys Cys Gly Lys Ala Phe Ser 525 530 535			1817
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Ala Lys Val Ala Glu Pro Ala Arg Ala Gly Thr Glu Ala Ala Leu Arg				
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ccg gcg ctg tgc gtg gct gag agc gcc aca agt ctc ggt ccg tta cac				2153
Pro Ala Leu Ser Val Ala Glu Ser Ala Thr Ser Leu Gly Pro Leu His				
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Pro Ala Arg Glu Val Gly Asp Arg Val Arg Val Ser Val Gly Leu Ile				
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Leu Ala Gln Leu Ile Ser Leu Asn Glu Lys Asp Glu Glu Met Ser Thr				
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Lys Val Tyr Leu Asp Leu Glu Trp Thr Asp Tyr Arg Leu Ser Trp Asp				
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 Ser Ala Pro Asp Leu Arg Arg Phe Ile Asp Gly Pro Asn Arg Ala Val
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gct cga cag ctg cag gaa cag gag gac cac gat gcg ctg aag gag gac 1393
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Leu Pro Pro Asp Ser Pro Arg Glu Leu Val Pro Lys Gln Ala Pro Cys
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Ser Pro Ser Asp Pro Ala Leu Pro Trp Thr Leu Gly His Gly Asn Gln
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Val Ala Ala Arg Pro Gly Arg Phe Phe Gly Val Tyr Leu Leu Tyr Cys
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Leu Asn Pro Arg Tyr Arg Gly Arg Val Tyr Val Gly Phe Thr Val Asn
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Thr Ala Arg Arg Val Gln Gln His Asn Gly Gly Arg Lys Lys Gly Gly
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Ala Trp Arg Thr Ser Gly Arg Gly Pro Trp Glu Met Val Leu Val Val
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Gln His Pro His Ala Ser Arg Arg Leu Ala His Val Gly Pro Arg Leu	
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Pro Gly Ala Cys Cys Ser Leu Cys Ala Gln Thr Ile Gln Asp Glu Glu	
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Gly Pro Leu Cys Cys Pro His Pro Gly Cys Leu Leu Arg Ala His Val	
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Ile Cys Leu Ala Glu Glu Phe Leu Gln Glu Glu Pro Gly Gln Leu Leu	
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Pro Leu Glu Gly Gln Cys Pro Cys Cys Glu Lys Ser Leu Leu Trp Gly	
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Asp Leu Ile Trp Leu Cys Gln Met Asp Thr Glu Lys Glu Val Glu Asp	
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Ser Glu Leu Glu Glu Ala His Trp Thr Asp Leu Leu Glu Thr *	
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Ala Ala Arg Ala Ser Leu Thr Gly Ser Cys Val Leu Gly Gln Ala Met						
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ccc ctg cgg gga ggg gct ggt cca tcc ccg gcc agc cac gga ccc acg						448
Pro Leu Arg Gly Gly Ala Gly Pro Ser Pro Ala Ser His Gly Pro Thr						
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cat gga ccc agc gac cca cgg acc tgc tta cct ggg cgc ggc gcg ggt						496
His Gly Pro Ser Asp Pro Arg Thr Cys Leu Pro Gly Arg Gly Ala Gly						
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ggc atg cgg cca cac gga agg ggc gcg ctg ggc tgc tgc ggc ctc tgc						544
Gly Met Arg Pro His Gly Arg Gly Ala Leu Gly Cys Cys Gly Leu Cys						
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agc ttc tac acc tgc cac ggg gcg gcc gga gat gaa atc atg cac cag						592
Ser Phe Tyr Thr Cys His Gly Ala Ala Gly Asp Glu Ile Met His Gln						
	75		80		85	
gac atc gtc ccg ctc tgt gct gcc gac atc cag gac cag cta aag aag						640
Asp Ile Val Pro Leu Cys Ala Ala Asp Ile Gln Asp Gln Leu Lys Lys						
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cgc ttt gct tac ctg tcc ggt ggg cgg ggg cag gac gga agc ccg gtt						688
Arg Phe Ala Tyr Leu Ser Gly Gly Arg Gly Gln Asp Gly Ser Pro Val						
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atc acc ttc cct gac tac ccg gcc ttc agc gag att ccg gac aag gag						736
Ile Thr Phe Pro Asp Tyr Pro Ala Phe Ser Glu Ile Pro Asp Lys Glu						
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Phe Gln Asn Val Met Thr Tyr Leu Thr Ser Ile Pro Ser Leu Gln Asp						
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gct ggc atc gga ttc atc ctg gtg ata gac cgg cga cgg gac aaa tgg						832

Ala Gly Ile Gly Phe Ile Leu Val Ile Asp Arg Arg Arg Asp Lys Trp	
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acc tcc gtg aag gcg tcc gtc ctg cgc atc gca gca tct ttc ccg gca	880
Thr Ser Val Lys Ala Ser Val Leu Arg Ile Ala Ala Ser Phe Pro Ala	
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Asn Leu Gln Leu Val Leu Val Leu Arg Pro Thr Gly Phe Phe Gln Arg	
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Thr Leu Ser Asp Ile Ala Phe Lys Phe Asn Arg Asp Asp Phe Lys Met	
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Lys Val Pro Val Ile Met Leu Ser Ser Val Pro Asp Leu His Gly Tyr	
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Ile Asp Lys Ser Gln Leu Thr Glu Asp Leu Gly Gly Thr Leu Asp Tyr	
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Cys His Ser Arg Trp Leu Cys Gln Arg Thr Ala Ile Glu Ser Phe Ala	
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Leu Met Val Lys Gln Thr Ala Gln Met Leu Gln Ser Phe Gly Thr Glu	
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Leu Cys Ala His Thr Glu Lys Lys Asp Lys Ala Lys Glu Asp Leu Arg	
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Leu Ala Leu Lys Glu Gly His Ser Val Leu Glu Ser Leu Arg Glu Leu	
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Gln Ala Glu Gly Ser Glu Pro Ser Val Asn Gln Asp Gln Leu Asp Asn	
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Gln Ala Thr Val Gln Arg Leu Leu Ala Gln Leu Asn Glu Thr Glu Ala	
350 355 360	
gcc ttc gat gag ttc tgg gca aag cat cag cag aaa ctg gag cag tgt	1456
Ala Phe Asp Glu Phe Trp Ala Lys His Gln Gln Lys Leu Glu Gln Cys	
365 370 375	
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Leu Gln Leu Arg His Phe Glu Gln Gly Phe Arg Glu Val Lys Ala Ile	
380 385 390	
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Leu Asp Ala Ala Ser Gln Lys Ile Ala Thr Phe Thr Asp Ile Gly Asn	
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Glu	Lys	Ser	Gly	Val	Ala	Val	Glu	Arg	Ala	Arg	Ala	Leu	Ser	Leu	Asp		
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Gly	Glu	Gln	Leu	Ile	Gly	Asn	Lys	His	Tyr	Ala	Val	Asp	Ser	Ile	Arg		
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cca	aag	tgc	cag	gag	ctc	cgg	cac	ctc	tgt	gac	cag	ttc	tct	gcg	gag		1744
Pro	Lys	Cys	Gln	Glu	Leu	Arg	His	Leu	Cys	Asp	Gln	Phe	Ser	Ala	Glu		
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Ile	Ala	Arg	Arg	Arg	Gly	Leu	Leu	Ser	Lys	Ser	Leu	Glu	Leu	His	Arg		
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cgc	ctg	gag	acg	tcc	atg	aag	tgg	tgt	gat	gaa	ggg	att	tac	ctg	ctg		1840
Arg	Leu	Glu	Thr	Ser	Met	Lys	Trp	Cys	Asp	Glu	Gly	Ile	Tyr	Leu	Leu		
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gcc	tca	caa	cct	gtg	gac	aag	tgc	cag	tcc	cag	gac	ggc	gcg	gag	gct		1888
Ala	Ser	Gln	Pro	Val	Asp	Lys	Cys	Gln	Ser	Gln	Asp	Gly	Ala	Glu	Ala		
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Ala	Leu	Gln	Glu	Ile	Glu	Lys	Phe	Leu	Glu	Thr	Gly	Ala	Glu	Asn	Lys		
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Ile	Gln	Glu	Leu	Asn	Ala	Ile	Tyr	Lys	Glu	Tyr	Glu	Ser	Ile	Leu	Asn		
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caa	gat	ctc	atg	gag	cac	gtg	cga	aag	gtc	ttc	cag	aag	cag	gca	agc		2032
Gln	Asp	Leu	Met	Glu	His	Val	Arg	Lys	Val	Phe	Gln	Lys	Gln	Ala	Ser		
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Met	Glu	Glu	Val	Phe	His	Arg	Arg	Gln	Ala	Ser	Leu	Lys	Lys	Leu	Ala		
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Ala	Arg	Gln	Thr	Arg	Pro	Val	Gln	Pro	Val	Ala	Pro	Arg	Pro	Glu	Ala		
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Leu	Ala	Lys	Ser	Pro	Cys	Pro	Ser	Pro	Gly	Ile	Arg	Arg	Gly	Ser	Glu		
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Asn	Ser	Ser	Ser	Glu	Gly	Gly	Ala	Leu	Arg	Arg	Gly	Pro	Tyr	Arg	Arg		
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gcc	aag	agt	gag	gtg	agt	gag	agc	cgg	cag	ggc	cgc	ggc	tca	gcg	ggg		2272
Ala	Lys	Ser	Glu	Val	Ser	Glu	Ser	Arg	Gln	Gly	Arg	Gly	Ser	Ala	Gly		
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Glu	Glu	Glu	Glu	Ser	Leu	Ala	Ile	Leu	Arg	Arg	His	Val	Met	Ser	Glu		
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Glu	Gly	Tyr	Ala	Ala	Glu	Met	Asp	Asn	Pro	Leu	Met	Ala	His	Leu	Leu		
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Glu	Ile	Tyr	His	Phe	His	Asn	Arg	Ile	Phe	Leu	Arg	Glu	Leu	Glu	Asn		
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Tyr	Thr	Asp	Cys	Pro	Glu	Leu	Val	Gly	Arg	Cys	Phe	Leu	Glu	Arg	Met		
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gaa	gat	ttc	cag	atc	tat	gag	aag	tac	tgt	cag	aac	aag	ccc	cgc	tct		2608
Glu	Asp	Phe	Gln	Ile	Tyr	Glu	Lys	Tyr	Cys	Gln	Asn	Lys	Pro	Arg	Ser		
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Glu	Ser	Leu	Trp	Arg	Gln	Cys	Ser	Asp	Cys	Pro	Phe	Phe	Gln	Glu	Cys		
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Gln	Arg	Lys	Leu	Asp	His	Lys	Leu	Ser	Leu	Asp	Ser	Tyr	Leu	Leu	Lys		
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cca	gtg	cag	agg	atc	acc	aag	tac	cag	ctg	ctg	ctc	aag	gaa	atg	ctg		2752
Pro	Val	Gln	Arg	Ile	Thr	Lys	Tyr	Gln	Leu	Leu	Leu	Lys	Glu	Met	Leu		
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Gly	Glu	Gly	Tyr	Glu	Lys	Ala	Pro	Ser	Tyr	Ser	Tyr	Lys	Gln	Ser	Leu		
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Val Pro Ser Asp Lys Ser Gly Phe Glu Pro Ala Ser Leu Lys Glu Glu
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Val Gly Glu Glu Ala Ile Val Glu Leu Val Glu Asn Gly Lys Lys Val
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Lys Val Asn Lys Asp Asp Ile Gln Lys Met Asn Pro Pro Lys Phe Ser
                    70                      75                      80

aag gtg gag gac atg gca gag ctc acg tgc ctc aac gaa gcc tcg gtg      525
Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu Asn Glu Ala Ser Val
                    85                      90                      95

ctg cac aac ctc aag gag cgt tac tac tca ggg ctc atc tac acc tat      573
Leu His Asn Leu Lys Glu Arg Tyr Tyr Ser Gly Leu Ile Tyr Thr Tyr
                    100                      105                      110

tca ggc ctg ttc tgt gtg gtc atc aat cct tac aag aac ctg ccc atc      621
Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr Lys Asn Leu Pro Ile
                    115                      120                      125

tac tct gaa gag att gtg gaa atg tac aag ggc aag aag agg cac gag      669
Tyr Ser Glu Glu Ile Val Glu Met Tyr Lys Gly Lys Lys Arg His Glu
                    130                      135                      140                      145

atg ccc cct cac atc tat gcc atc aca gac acc gcc tac agg agt atg      717
Met Pro Pro His Ile Tyr Ala Ile Thr Asp Thr Ala Tyr Arg Ser Met
                    150                      155                      160

atg caa gac cga gaa gat caa tcc atc ttg tgc act ggt gaa tct gga      765
Met Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser Gly
                    165                      170                      175

gct ggc aag acg gag aac acc aag aag gtc atc cag tat ctg gcg tac      813
Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala Tyr
                    180                      185                      190

gtg gcg tcc tcg cac aag agc aag aag gac cag ggc gag ctg gag cgg      861
Val Ala Ser Ser His Lys Ser Lys Lys Asp Gln Gly Glu Leu Glu Arg

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195	200	205	
cag ctg ctg cag gcc aac ccc atc ctg gag gcc ttc ggg aac gcc aag Gln Leu Leu Gln Ala Asn Pro Ile Leu Glu Ala Phe Gly Asn Ala Lys 210 215 220 225			909
acc gtg aag aat gac aac tcc tcc cgc ttc ggc aaa ttc att cgc atc Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe Ile Arg Ile 230 235 240			957
aac ttt gat gtc aat ggc tac att gtt gga gcc aac att gag act tat Asn Phe Asp Val Asn Gly Tyr Ile Val Gly Ala Asn Ile Glu Thr Tyr 245 250 255			1005
ctt ttg gag aaa tct cgt gct atc cgc caa gcc aag gaa gaa cgg acc Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Lys Glu Glu Arg Thr 260 265 270			1053
ttc cac atc ttc tat tat ctg ctg tct ggg gct gga gag cac ctg aag Phe His Ile Phe Tyr Tyr Leu Leu Ser Gly Ala Gly Glu His Leu Lys 275 280 285			1101
acc gat ctg ctg ttg gag ccg tac aac aaa tac cgc ttc ctg tcc aat Thr Asp Leu Leu Leu Glu Pro Tyr Asn Lys Tyr Arg Phe Leu Ser Asn 290 295 300 305			1149
gga cac gtc acc atc ccc ggg cag cag gac aag gac atg ttc cag gag Gly His Val Thr Ile Pro Gly Gln Gln Asp Lys Asp Met Phe Gln Glu 310 315 320			1197
acc atg gag gcc atg agg att atg ggc atc cca gaa gag gag caa atg Thr Met Glu Ala Met Arg Ile Met Gly Ile Pro Glu Glu Glu Gln Met 325 330 335			1245
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ttc aag aag gag cgg aac act gac cag gcg tcc atg ccc gac aac aca Phe Lys Lys Glu Arg Asn Thr Asp Gln Ala Ser Met Pro Asp Asn Thr 355 360 365			1341
gct gcc caa aag gtg tcc cat ctg ttg ggt atc aat gtg acc gat ttc Ala Ala Gln Lys Val Ser His Leu Leu Gly Ile Asn Val Thr Asp Phe 370 375 380 385			1389
acc aga gga atc ctg acc ccg cgc atc aag gtg gga cgg gat tac gtc Thr Arg Gly Ile Leu Thr Pro Arg Ile Lys Val Gly Arg Asp Tyr Val 390 395 400			1437
cag aag gcg cag act aaa gag cag gct gac ttt gcc atc gag gcc ttg Gln Lys Ala Gln Thr Lys Glu Gln Ala Asp Phe Ala Ile Glu Ala Leu 405 410 415			1485
gcc aag gcg acc tat gag cgg atg ttc cgc tgg ctg gtg ctg cgc atc Ala Lys Ala Thr Tyr Glu Arg Met Phe Arg Trp Leu Val Leu Arg Ile 420 425 430			1533
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atc ctg gac att gcc ggc ttc gag atc ttt gat ctg aac tcg ttt gag Ile Leu Asp Ile Ala Gly Phe Glu Ile Phe Asp Leu Asn Ser Phe Glu 1629			

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cag ctg tgc atc aat tac acc aat gag aag ctg cag cag ctc ttc aac				1677
Gln Leu Cys Ile Asn Tyr Thr Asn Glu Lys Leu Gln Gln Leu Phe Asn				
	470	475	480	
cac acc atg ttc atc ctg gag cag gag gag tac cag cgc gag ggc atc				1725
His Thr Met Phe Ile Leu Glu Gln Glu Glu Tyr Gln Arg Glu Gly Ile				
	485	490	495	
gag tgg aac ttc atc gac ttt ggc ctc gac ctg cag ccc tgc atc gac				1773
Glu Trp Asn Phe Ile Asp Phe Gly Leu Asp Leu Gln Pro Cys Ile Asp				
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ctc att gag aag cca gca ggc ccc ccg ggc att ctg gcc ctg ctg gac				1821
Leu Ile Glu Lys Pro Ala Gly Pro Pro Gly Ile Leu Ala Leu Leu Asp				
	515	520	525	
gag gag tgc tgg ttc ccc aaa gcc acc gac aag agc ttc gtg gag aag				1869
Glu Glu Cys Trp Phe Pro Lys Ala Thr Asp Lys Ser Phe Val Glu Lys				
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gtg atg cag gag cag ggc acc cac ccc aag ttc cag aag ccc aag cag				1917
Val Met Gln Glu Gln Gly Thr His Pro Lys Phe Gln Lys Pro Lys Gln				
	550	555	560	
ctg aag gac aaa gct gat ttc tgc att atc cac tat gcc ggc aag gtg				1965
Leu Lys Asp Lys Ala Asp Phe Cys Ile Ile His Tyr Ala Gly Lys Val				
	565	570	575	
gat tac aaa gct gac gag tgg ctg atg aag aac atg gat ccc ctg aat				2013
Asp Tyr Lys Ala Asp Glu Trp Leu Met Lys Asn Met Asp Pro Leu Asn				
	580	585	590	
gac aac atc gcc aca ctg ctc cac cag tcc tct gac aag ttt gtc tcg				2061
Asp Asn Ile Ala Thr Leu Leu His Gln Ser Ser Asp Lys Phe Val Ser				
	595	600	605	
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Glu Leu Trp Lys Asp Val Asp Arg Ile Ile Gly Leu Asp Gln Val Ala				
	610	615	620	625
ggc atg tcg gag acc gca ctg ccc ggg gcc ttc aag acg cgg aag ggc				2157
Gly Met Ser Glu Thr Ala Leu Pro Gly Ala Phe Lys Thr Arg Lys Gly				
	630	635	640	
atg ttc cgc act gtg ggg cag ctt tac aag gag cag ctg gcc aag ctg				2205
Met Phe Arg Thr Val Gly Gln Leu Tyr Lys Glu Gln Leu Ala Lys Leu				
	645	650	655	
atg gct acg ctg agg aac acg aac ccc aac ttt gtc cgc tgc atc atc				2253
Met Ala Thr Leu Arg Asn Thr Asn Pro Asn Phe Val Arg Cys Ile Ile				
	660	665	670	
ccc aac cac gag aag aag gcc ggc aag ctg gac ccg cat ctc gtg ctg				2301
Pro Asn His Glu Lys Lys Ala Gly Lys Leu Asp Pro His Leu Val Leu				
	675	680	685	
gac cag ctg cgc tgc aac ggt gtt ctc gag ggc atc cgt atc tgc cgc				2349
Asp Gln Leu Arg Cys Asn Gly Val Leu Glu Gly Ile Arg Ile Cys Arg				
	690	695	700	705
cag ggc ttc ccc aac agg gtg gtc ttc cag gag ttt cgg cag aga tat				2397
Gln Gly Phe Pro Asn Arg Val Val Phe Gln Glu Phe Arg Gln Arg Tyr				

1437

	965	970	975	
	gag gag cag atc atc ctg gag gac cag aac tgc aag ctg gcc aag gaa			3213
	Glu Glu Gln Ile Ile Leu Glu Asp Gln Asn Cys Lys Leu Ala Lys Glu			
	980	985	990	
	aag aaa ctg ctg gaa gac aga ata gct gag ttc acc acc aac ctc aca			3261
	Lys Lys Leu Leu Glu Asp Arg Ile Ala Glu Phe Thr Thr Asn Leu Thr			
	995	1000	1005	
	gaa gag gag gag aaa tct aag agc ctc gcc aag ctc aag aac aag cat			3309
	Glu Glu Glu Glu Lys Ser Lys Ser Leu Ala Lys Leu Lys Asn Lys His			
	1010	1015	1020	1025
	gag gca atg atc act gac ttg gaa gag cgc ctc cgc agg gag gag aag			3357
	Glu Ala Met Ile Thr Asp Leu Glu Glu Arg Leu Arg Arg Glu Glu Lys			
	1030	1035	1040	
	cag cga cag gag ctg gag aag acc cgc cgg aag ctg gag gga gac tcc			3405
	Gln Arg Gln Glu Leu Glu Lys Thr Arg Arg Lys Leu Glu Gly Asp Ser			
	1045	1050	1055	
	aca gac ctc agc gac cag atc gcc gag ctc cag gcc cag atc gcg gag			3453
	Thr Asp Leu Ser Asp Gln Ile Ala Glu Leu Gln Ala Gln Ile Ala Glu			
	1060	1065	1070	
	ctc aag atg cag ctg gcc aag aaa gag gag gag ctc cag gcc gcc ctg			3501
	Leu Lys Met Gln Leu Ala Lys Lys Glu Glu Glu Leu Gln Ala Ala Leu			
	1075	1080	1085	
	gcc aga gtg gaa gag gaa gct gcc cag aag aac atg gcc ctc aag aag			3549
	Ala Arg Val Glu Glu Glu Ala Ala Gln Lys Asn Met Ala Leu Lys Lys			
	1090	1095	1100	1105
	atc cgg gag ctg gaa tct cag atc tct gaa ctc cag gaa gac ctg gag			3597
	Ile Arg Glu Leu Glu Ser Gln Ile Ser Glu Leu Gln Glu Asp Leu Glu			
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	Ser Glu Arg Ala Ser Arg Asn Lys Ala Glu Lys Gln Lys Arg Asp Leu			
	1125	1130	1135	
	ggg gaa gag cta gag gct ctg aaa aca gag ttg gag gac acg ctg gat			3693
	Gly Glu Glu Leu Glu Ala Leu Lys Thr Glu Leu Glu Asp Thr Leu Asp			
	1140	1145	1150	
	tcc aca gct gcc cag cag gag ctc agg tca aaa cgt gag cag gag gtg			3741
	Ser Thr Ala Ala Gln Gln Glu Leu Arg Ser Lys Arg Glu Gln Glu Val			
	1155	1160	1165	
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	Asn Ile Leu Lys Lys Thr Leu Glu Glu Glu Ala Lys Thr His Glu Ala			
	1170	1175	1180	1185
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	Gln Ile Gln Glu Met Arg Gln Lys His Ser Gln Ala Val Glu Glu Leu			
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	gcg gag cag ctg gag cag acg aag cgg gtg aaa gca aac ctc gag aag			3885
	Ala Glu Gln Leu Glu Gln Thr Lys Arg Val Lys Ala Asn Leu Glu Lys			
	1205	1210	1215	
	gca aag cag act ctg gag aac gag cgg ggg gag ctg gcc aac gag gtg			3933
	Ala Lys Gln Thr Leu Glu Asn Glu Arg Gly Glu Leu Ala Asn Glu Val			

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gtg gag gcg cag ctg cag gag ctg cag gtc aag ttc aac gag gga gag Val Glu Ala Gln Leu Gln Glu Leu Gln Val Lys Phe Asn Glu Gly Glu 1250 1255 1260 1265			4029
cgc gtg cgc aca gag ctg gcc gac aag gtc acc aag ctg cag gtg gag Arg Val Arg Thr Glu Leu Ala Asp Lys Val Thr Lys Leu Gln Val Glu 1270 1275 1280			4077
ctg gac aac gtg acc ggg ctt ctc agc cag tcc gac agc aag tcc agc Leu Asp Asn Val Thr Gly Leu Leu Ser Gln Ser Asp Ser Lys Ser Ser 1285 1290 1295			4125
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ggg tgc ctg gaa act gct gag gag gtg aag agg aag ctc cag aag gac Gly Cys Leu Glu Thr Ala Glu Glu Val Lys Arg Lys Leu Gln Lys Asp 1380 1385 1390			4413
ctg gag ggc ctg agc cag cgg cac gag gag aag gtg gcc gcc tac gac Leu Glu Gly Leu Ser Gln Arg His Glu Glu Lys Val Ala Ala Tyr Asp 1395 1400 1405			4461
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gcc aag tat gca gag gag cgc gac cgg gct gag gcg gag gcc cga gag Ala Lys Tyr Ala Glu Glu Arg Asp Arg Ala Glu Ala Glu Ala Arg Glu 1460 1465 1470			4653
aag gag acc aag gct ctg tcg ctg gcc cgg gcc ctg gag gaa gcc atg Lys Glu Thr Lys Ala Leu Ser Leu Ala Arg Ala Leu Glu Glu Ala Met 1475 1480 1485			4701

1475	1480	1485	
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Glu Gln Lys Ala Glu Leu Glu Arg Leu Asn Lys Gln Phe Arg Thr Glu			
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Met Glu Asp Leu Met Ser Ser Lys Asp Asp Val Gly Lys Ser Val His			
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aag acg cag ctg gaa gag ctg gag gac gag ctg cag gcc acc gaa gat			4893
Lys Thr Gln Leu Glu Glu Leu Glu Asp Glu Leu Gln Ala Thr Glu Asp			
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gcc aag ctg cgg ttg gag gtc aac ctg cag gcc atg aag gcc cag ttc			4941
Ala Lys Leu Arg Leu Glu Val Asn Leu Gln Ala Met Lys Ala Gln Phe			
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Glu Arg Asp Leu Gln Gly Arg Asp Glu Gln Ser Glu Glu Lys Lys Lys			
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Arg Lys Gln Arg Ser Met Ala Val Ala Ala Arg Lys Lys Leu Glu Met			
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Asp Leu Lys Asp Leu Glu Ala His Ile Asp Ser Ala Asn Lys Asn Arg			
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Asp Glu Ala Ile Lys Gln Leu Arg Lys Leu Gln Ala Gln Met Lys Asp			
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Cys Met Arg Glu Leu Asp Asp Thr Arg Ala Ser Arg Glu Glu Ile Leu			
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Ser Gly Lys Gly Ala Leu Ala Leu Glu Glu Lys Arg Arg Leu Glu Ala			
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Arg Ile Ala Gln Leu Glu Glu Glu Leu Glu Glu Glu Gln Gly Asn Thr			

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Ile Asn Thr Asp Leu Asn Leu Glu Arg Ser His Ala Gln Lys Asn Glu				
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Leu Gln Glu Met Glu Gly Thr Val Lys Ser Lys Tyr Lys Ala Ser Ile				
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Thr Ala Leu Glu Ala Lys Ile Ala Gln Leu Glu Glu Gln Leu Asp Asn				
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Lys Lys Leu Lys Asp Val Leu Leu Gln Val Asp Asp Glu Arg Arg Asn				
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Met Ser Leu Arg Val His
1 5
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Leu	Leu	Cys	Leu	Leu	Met	Ile	Thr	Val	Thr	Val	Gly	Pro	Gly	Ala	Ser		
		25					30					35					
ggg	gtg	tgc	ccc	acc	gct	tgc	atc	tgt	gcc	act	gac	atc	gtc	agc	tgc	376	
Gly	Val	Cys	Pro	Thr	Ala	Cys	Ile	Cys	Ala	Thr	Asp	Ile	Val	Ser	Cys		
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Lys	Arg	Leu	Asp	Leu	Ser	Tyr	Asn	Arg	Ile	Gly	Leu	Leu	Asp	Ser	Glu		
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Trp	Ile	Pro	Val	Ser	Phe	Ala	Lys	Leu	Asn	Thr	Leu	Ile	Leu	Arg	His		
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Phe	Met	Asn	Cys	Ser	Asp	Ser	Ile	Ile	Asn	Gly	Ser	Phe	Arg	Ala	Leu		
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Gly	Phe	Ile	His	Glu	Ala	Gln	Val	Gly	Glu	Arg	Leu	Met	Val	His	Cys		
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Phe	His	Asn	Gly	Ser	Leu	Val	Ile	Glu	Ser	Pro	Arg	Phe	Glu	Asp	Ala		
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Thr	Val	Asp	Val	Thr	Ile	Asn	Val	Ser	Asn	Phe	Thr	Val	Ser	Arg	Ser		
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Val	Ala	Ser	Ile	Val	Leu	Val	Leu	Leu	Tyr	Leu	Tyr	Leu	Thr	Pro	Cys		
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Ala	Asp	Glu	Arg	Lys	Ala	Gly	Ala	Gly	Lys	Arg	Val	Val	Phe	Leu	Glu		
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Asp Val Arg Glu Lys Lys Glu Asn Leu Leu Leu Asn Ser Glu Arg Ser
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Thr Arg Leu Leu Thr Lys Thr Ser His Ser Gln Gly Gly Asp Gln Ala
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Tyr Arg Pro Asn Ala Cys Glu Glu Ala Leu Ile Asn Gly Ser Gly Val	
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Lys Phe Lys Glu Phe Ile His Tyr Leu Leu Asp Ser His Arg Pro Val	
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Ser Gln Pro Arg Ala Gln Arg His Ser Ser Glu Pro Arg Pro Gly Ala	
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 Ser Phe Pro His Phe Gly His Pro Tyr Arg Gly Ala Ser Gln Phe Leu
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 Ala Ser Ala Ser Ser Ser Thr Thr Cys Cys Glu Ser Thr Gln Arg Ser
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 Val Ser Asp Val Ala Ser Gly Ser Thr Pro Ala Pro Ala Leu Cys Cys
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 Ala Pro Tyr Asp Ser Arg Leu Leu Gly Ser Ala Arg Pro Glu Leu Gly
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 gcc gcc ttg ggc atc tat gga gca ccc tat gcg gcc gct gca gct gcc 776
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 Gln Ser Tyr Pro Gly Tyr Leu Pro Tyr Ser Pro Glu Pro Pro Ser Leu
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 Tyr Gly Ala Leu Asn Pro Gln Tyr Glu Phe Lys Glu Ala Ala Gly Ser
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 Phe Thr Ser Ser Leu Ala Gln Pro Gly Ala Tyr Tyr Pro Tyr Glu Arg
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 Gly Ala Gly Arg Arg Lys Asn Ala Thr Arg Glu Thr Thr Ser Thr Leu
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 Lys Ala Trp Leu Asn Glu His Arg Lys Asn Pro Tyr Pro Thr Lys Gly
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 Ser Thr Trp Phe Ala Asn Ala Arg Arg Arg Leu Lys Lys Glu Asn Lys
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Val	Thr	Ala	Ser	Gln	Glu	Ala	Arg	Gly	Leu	Arg	Leu	Ser	Asp	Leu	Glu	
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Gln	Ser	Leu	Pro	Gly	Pro	Cys	Ala	Ala	Ala	Arg	Glu	Gly	Arg	Leu	Glu	
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Arg	Arg	Glu	Cys	Gly	Leu	Ala	Ala	Pro	Arg	Phe	Ser	Phe	Asn	Asp	Pro	
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Ser	Gly	Ser	Glu	Glu	Ala	Asp	Phe	Leu	Ser	Ala	Glu	Thr	Gly	Ser	Pro	
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Arg	Pro	Arg	Pro	Arg	Ser	Pro	Glu	Cys	Arg	Met	Ile	Pro	Gly	Gln	Pro	
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Pro	Ala	Ser	Ala	Arg	Arg	Leu	Ser	Val	Pro	Arg	Asp	Ser	Ala	Cys	Asp	
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gag	tct	tcc	tgc	ata	ccc	aaa	gcc	ttt	gga	aac	ccc	aag	ttt	gcc	ctg	1784
Glu	Ser	Ser	Cys	Ile	Pro	Lys	Ala	Phe	Gly	Asn	Pro	Lys	Phe	Ala	Leu	
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Gln	Gly	Leu	Pro	Leu	Asn	Cys	Ala	Pro	Cys	Pro	Arg	Arg	Ser	Glu	Pro	
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Val	Val	Gln	Cys	Gln	Tyr	Pro	Ser	Gly	Ala	Glu	Gly	Ser	Gly	Pro	Pro	
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Ala	Ala	Leu	Gly	Val	Ser	Met	Gln	Lys	Thr	Pro	Thr	Tyr	Arg	Pro	Ala	
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Arg	Gln	Leu	His	Thr	Leu	Cys	His	Ser	Ser	Leu	Pro	Arg	Gly	Asp	Ser	
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 Pro Gly Leu Leu Glu Lys Ser Lys Thr Val Gly Gln Thr His Thr Thr
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 Ala Ser Arg Lys Lys Phe Val Glu Gly Val Asp Ser Asp Tyr His Asp
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 gaa aac atg tac tac agc cag tct tct atg ttt cca cat cgg tca gaa 617
 Glu Asn Met Tyr Tyr Ser Gln Ser Ser Met Phe Pro His Arg Ser Glu
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 aaa gat atg ctg gca tca cca tct aca tca ggt cag ctg tct cag ttt 665
 Lys Asp Met Leu Ala Ser Pro Ser Thr Ser Gly Gln Leu Ser Gln Phe
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 Gly Ala Ser Leu Tyr Gly Gln Gln Ser Ala Leu Gly Leu Pro Met Arg
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Gly Met Ser Asn Asn Thr Pro Gln Leu Asn Arg Ser Leu Ser Gln Gly	
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Thr Gln Leu Pro Ser His Val Thr Pro Thr Thr Gly Val Pro Thr Met	
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Ser Leu His Thr Pro Pro Ser Pro Ser Arg Gly Ile Leu Pro Met Asn	
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Pro Arg Asn Met Met Asn His Ser Gln Val Gly Gln Gly Ile Gly Ile	
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Pro Ser Arg Thr Asn Ser Met Ser Ser Ser Gly Leu Gly Ser Pro Asn	
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Gln Pro Phe Thr Val Asn Ser Met Ser Gly Phe Gly Met Asn Arg Asn	
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Leu Ile Asn Pro Leu Ala Gly Arg Ala Pro Tyr Val Gly Met Val Thr	
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Asp Asp Ser Lys Ser Asn Leu Asn Thr Ser Gly Lys Thr Thr Ser Ser	
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Thr Asp Gly Pro Lys Phe Pro Gly Asp Lys Ser Ser Thr Thr Gln Asn	
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Asn Asn Gln Gln Lys Lys Gly Ile Gln Val Leu Pro Asp Gly Arg Val	
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 Pro Glu Asn Leu Tyr Pro Lys Phe Ala Ser Pro Trp Ala Ser Ser Pro
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 Cys Arg Pro Gln Asp Ile Asp Phe His Val Pro Ser Glu Tyr Leu Thr
 410 415 420

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 Asn Ile His Ile Arg Asp Lys Leu Phe Phe Phe Phe Ser Trp Leu Gln
 425 430 435

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acgtattaca acttttagct gcagtggagc tttttaaccg tgattggaga taccacaaag 1889

aagaacgagt atggattacc agggcaccag gcatggagcc aacaatgaaa accaatacct 1949

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 Gln Tyr Ser Thr Gln Ala Pro Thr Leu Pro Leu Pro Thr Val Gly Ala
 20 25 30

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 Ser Tyr Thr Gly Gln Pro Thr Pro Gly Met Asp Pro Ala Val Asn Pro
 35 40 45

gcc ttt ccc cca gct gcc ccg gca ggg tac ggt gga tac cag ccc cac 253

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Ser	Gly	Gln	Asp	Phe	Ala	Tyr	Gly	Ser	Arg	Pro	Gln	Glu	Pro	Val	Pro	
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Thr	Ala	Thr	Thr	Met	Ala	Thr	Tyr	Gln	Asp	Ser	Tyr	Ser	Tyr	Gly	Gln	
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Ser	Ala	Ala	Ala	Arg	Ser	Tyr	Glu	Asp	Arg	Pro	Tyr	Phe	Gln	Ser	Ala	
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gcc	ctc	cag	tct	ggg	cgc	atg	aca	gcc	gca	gac	tcc	ggc	cag	cca	ggg	445
Ala	Leu	Gln	Ser	Gly	Arg	Met	Thr	Ala	Ala	Asp	Ser	Gly	Gln	Pro	Gly	
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Thr	Gln	Glu	Ala	Cys	Gly	Gln	Pro	Ser	Pro	His	Gly	Ser	His	Ser	His	
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Ser	Thr	Leu	Ser	Ser	Gly	Tyr	Thr	Tyr	Pro	Thr	Ala	Thr	Gly	Val	Gln	
	160				165					170					175	
ccc	gag	tcg	tca	gct	tcc	atc	gtg	acc	tcc	tac	ccc	ccg	ccc	tcc	tac	637
Pro	Glu	Ser	Ser	Ala	Ser	Ile	Val	Thr	Ser	Tyr	Pro	Pro	Pro	Ser	Tyr	
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Asn	Pro	Thr	Cys	Thr	Ala	Tyr	Thr	Ala	Pro	Ser	Tyr	Pro	Asn	Tyr	Asp	
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Pro	Pro	Pro	Pro	Gly	Pro	Pro	Gln	Gln	Leu	Pro	Pro	Pro	Pro	Ala	Pro	
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	240				245					250					255	
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Ser	Lys	Leu	Pro	Arg	Pro	Lys	Ala	Gly	Pro	Arg	Gln	Leu	Gln	Leu	His	
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Tyr	Cys	Asp	Ile	Cys	Lys	Ile	Ser	Cys	Ala	Gly	Pro	Gln	Thr	Tyr	Arg	
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Glu	His	Leu	Gly	Gly	Gln	Lys	His	Arg	Lys	Lys	Glu	Ala	Ala	Gln	Lys	
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Ala	His	Ile	Arg	Gly	Ser	Lys	His	Gln	Lys	Val	Phe	Lys	Leu	His	Ala	
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Lys	Leu	Gly	Lys	Pro	Ile	Pro	Thr	Leu	Glu	Pro	Ala	Leu	Ala	Thr	Glu	
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Ser	Pro	Pro	Gly	Ala	Glu	Ala	Lys	Pro	Thr	Ser	Pro	Thr	Gly	Pro	Ser	
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Val	Cys	Ala	Ser	Ser	Arg	Pro	Ala	Leu	Ala	Lys	Arg	Pro	Val	Ala	Ser	
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Lys	Ala	Leu	Cys	Glu	Gly	Pro	Pro	Glu	Pro	Gln	Ala	Ala	Gly	Cys	Arg	
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ccc	cag	tgg	ggg	aaa	cca	gcc	caa	cct	aaa	tta	gag	ggt	ccc	gga	gca	1357
Pro	Gln	Trp	Gly	Lys	Pro	Ala	Gln	Pro	Lys	Leu	Glu	Gly	Pro	Gly	Ala	
				420				425						430		
cct	acc	caa	gga	ggc	tca	aag	gaa	gct	ccc	gcg	ggc	tgc	tct	gat	gcg	1405
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His Val Met Cys Lys His Ala Thr Ile Tyr Pro Thr Glu Gln Glu Leu	
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 Gly Thr Gly Tyr Thr Lys Leu Gly Tyr Ala Gly Asn Thr Glu Pro Gln
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 Phe Ile Ile Pro Ser Cys Ile Ala Ile Arg Glu Ser Ala Lys Val Val
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Tyr Phe Leu Met Thr Glu Pro Pro Leu Asn Thr Pro Glu Asn Arg Glu	
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aca agc ctt cct gga gac aag aaa agc ggc acc tca cct gcc gcc acc Thr Ser Leu Pro Gly Asp Lys Lys Ser Gly Thr Ser Pro Ala Ala Thr 505 510 515 520	3208
gcc aag agc cac ctc agc ctc cgg cgg aga cag gcc ctc agg ggg aag Ala Lys Ser His Leu Ser Leu Arg Arg Arg Gln Ala Leu Arg Gly Lys 525 530 535	3256
agc agc cct gtc ctg aag aag acc ccc aac aag ggc ctg gta cag gtc Ser Ser Pro Val Leu Lys Lys Thr Pro Asn Lys Gly Leu Val Gln Val 540 545 550	3304
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aag gtg atc aag acc cgc tac cgc att gtc aag aag acg ccg gcc tcg Lys Val Ile Lys Thr Arg Tyr Arg Ile Val Lys Lys Thr Pro Ala Ser 585 590 595 600	3448
cct ctc agc gcc ccg ccc ttc ccc ctg tct ctg ccc tcc tgg cgg gcc Pro Leu Ser Ala Pro Pro Phe Pro Leu Ser Leu Pro Ser Trp Arg Ala 605 610 615	3496
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aac aag ctc tcc aag acc tcc ggc cag ccc agt gat gcg ggc agc agg Asn Lys Leu Ser Lys Thr Ser Gly Gln Pro Ser Asp Ala Gly Ser Arg 665 670 675 680	3688
ccc ctc ctg cgc aca ggc cgg ctg gat cct gca ggc agc tgt agc cgt Pro Leu Leu Arg Thr Gly Arg Leu Asp Pro Ala Gly Ser Cys Ser Arg 685 690 695	3736
tcc ctg gcc agc cgg gca gtg cag cgc agc ctg gcc atc atc cgg cag Ser Leu Ala Ser Arg Ala Val Gln Arg Ser Leu Ala Ile Ile Arg Gln 700 705 710	3784
gcg cgg cag cgc agg gag aag agg aag gag tac tgc atg tac tac aac Ala Arg Gln Arg Arg Glu Lys Arg Lys Glu Tyr Cys Met Tyr Tyr Asn 715 720 725	3832
cgc ttc ggc agg tgc aac cgt ggc gag cgc tgc ccc tac atc cac gat Arg Phe Gly Arg Cys Asn Arg Gly Glu Arg Cys Pro Tyr Ile His Asp 730 735 740	3880

ccc gag aag gtg gcc gtg tgc acc agg ttt gtc cgg ggc acc tgc aag Pro Glu Lys Val Ala Val Cys Thr Arg Phe Val Arg Gly Thr Cys Lys 745 750 755 760	3928
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aatctttctt tgctttcccc atcttttcct cgcatttttt caccatcttt cctcaatct 180
ccaggagcca atgcgagact ttggctccga ttaagcgacg gcccgagact tgggggtgcgc 240
gaggaggatc gacagagtgg tg atg gag agc acc cct tca agg gga ctg aac 292
                Met Glu Ser Thr Pro Ser Arg Gly Leu Asn
                  1             5             10

cga gta cac cta caa tgc agg aat ctg cag gaa ttc tta ggg ggc ctg 340
Arg Val His Leu Gln Cys Arg Asn Leu Gln Glu Phe Leu Gly Gly Leu
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agc cct ggg gta ttg gac cga ttg tat ggg cac cct gcc aca tgt ctg 388
Ser Pro Gly Val Leu Asp Arg Leu Tyr Gly His Pro Ala Thr Cys Leu
              30             35             40

gct gtc ttc agg gag ctc cca tcc ttg gct aag aac tgg gtg atg cgg 436
Ala Val Phe Arg Glu Leu Pro Ser Leu Ala Lys Asn Trp Val Met Arg
              45             50             55

atg ctc ttt ctg gag cag cct ttg cca cag gct gct gta gct ctg tgg 484
Met Leu Phe Leu Glu Gln Pro Leu Pro Gln Ala Ala Val Ala Leu Trp
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gta aag aag gaa ttc agc aag gct cag gag gaa agt aca ggg ctg ctg 532
Val Lys Lys Glu Phe Ser Lys Ala Gln Glu Glu Ser Thr Gly Leu Leu
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agc ggc ctc cgg atc tgg cac aca cag ctg ctc cca ggc ggg ctc cag 580
Ser Gly Leu Arg Ile Trp His Thr Gln Leu Leu Pro Gly Gly Leu Gln
              95             100             105

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ctg ggt ggg ggg aag gcc tgg tct gat gac aca agt cag ctg gga cca Leu Gly Gly Gly Lys Ala Trp Ser Asp Asp Thr Ser Gln Leu Gly Pro 125 130 135	676
gac aag cat gcc cgg gac gtt ccc tcc ctt gac aag tac gcc gag gag Asp Lys His Ala Arg Asp Val Pro Ser Leu Asp Lys Tyr Ala Glu Glu 140 145 150	724
cga tgg gag gtg gtc ttg cac ttc atg gtg ggc tcc ccc agt gca gct Arg Trp Glu Val Val Leu His Phe Met Val Gly Ser Pro Ser Ala Ala 155 160 165 170	772
gtc agc cag gac ttg gct cag ctc ctc agc cag gct ggg ctc atg aag Val Ser Gln Asp Leu Ala Gln Leu Leu Ser Gln Ala Gly Leu Met Lys 175 180 185	820
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ggc act gtg cat cag cca ggt ttc att gtc gtg gaa acc aat tac cga Gly Thr Val His Gln Pro Gly Phe Ile Val Val Glu Thr Asn Tyr Arg 300 305 310	1204
ctg tat gcc tac acg gag tcg gag ctg cag att gcc ctc att gcc ctc Leu Tyr Ala Tyr Thr Glu Ser Glu Leu Gln Ile Ala Leu Ile Ala Leu 315 320 325 330	1252
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 365 370 375
 cag aca cct gtg ctg ccc ccc acc atc acc gac cag atc cgg ctc tgg 1444
 Gln Thr Pro Val Leu Pro Pro Thr Ile Thr Asp Gln Ile Arg Leu Trp
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 Glu Leu Glu Arg Asp Arg Leu Arg Phe Thr Glu Gly Val Leu Tyr Asn
 395 400 405 410
 cag ttc ctg tcg caa gtg gac ttt gag ctg ctg ctg gcc cac gcg cgg 1540
 Gln Phe Leu Ser Gln Val Asp Phe Glu Leu Leu Leu Ala His Ala Arg
 415 420 425
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 Glu Leu Gly Val Leu Val Phe Glu Asn Ser Ala Lys Arg Leu Met Val
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 gtg acc ccg gcc ggg cac agc gac gtc aag cgc ttt tgg aag cgg cag 1636
 Val Thr Pro Ala Gly His Ser Asp Val Lys Arg Phe Trp Lys Arg Gln
 445 450 455
 aaa cat agc tcc tga gagcgcggga cttggacacg gacctcggcg ggcgggactg 1691
 Lys His Ser Ser *
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 gagacctcgg accagccgcc ttg atg aca gca tcc gcg tcc tcc ttt tca 230
 Met Thr Ala Ser Ala Ser Ser Phe Ser
 1 5
 tca tct cag ggt gtc cag cag ccc tcc atc tac agc ttc tcc caa ata 278
 Ser Ser Gln Gly Val Gln Gln Pro Ser Ile Tyr Ser Phe Ser Gln Ile
 10 15 20 25
 acc aga agc ttg ttt ctc agc aat ggt gtg gcc gcc aac gac aaa ctc 326
 Thr Arg Ser Leu Phe Leu Ser Asn Gly Val Ala Ala Asn Asp Lys Leu
 30 35 40
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Leu	Leu	Ser	Ser	Asn	Arg	Ile	Thr	Ala	Ile	Val	Asn	Ala	Ser	Val	Glu		
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gtg	gtc	aac	gta	ttc	ttc	gag	ggc	att	cag	tac	ata	aag	gtg	cct	gtt	422	
Val	Val	Asn	Val	Phe	Phe	Glu	Gly	Ile	Gln	Tyr	Ile	Lys	Val	Pro	Val		
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acc	gat	gct	cgt	gac	tcg	cgt	ctc	tac	gac	ttt	ttt	gac	ccc	att	gct	470	
Thr	Asp	Ala	Arg	Asp	Ser	Arg	Leu	Tyr	Asp	Phe	Phe	Asp	Pro	Ile	Ala		
		75				80					85						
gat	ctt	atc	cac	acc	atc	gat	atg	agg	cag	ggc	cgt	acg	ctg	ctg	cac	518	
Asp	Leu	Ile	His	Thr	Ile	Asp	Met	Arg	Gln	Gly	Arg	Thr	Leu	Leu	His		
	90				95					100					105		
tgc	atg	gct	gga	gtg	agc	cgt	tcc	gcc	tca	ctg	tgc	ctt	gcg	tac	ctc	566	
Cys	Met	Ala	Gly	Val	Ser	Arg	Ser	Ala	Ser	Leu	Cys	Leu	Ala	Tyr	Leu		
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atg	aaa	tac	cac	tcc	atg	tcg	ctg	ctg	gac	gcc	cat	aca	tgg	acc	aag	614	
Met	Lys	Tyr	His	Ser	Met	Ser	Leu	Leu	Asp	Ala	His	Thr	Trp	Thr	Lys		
			125					130					135				
tcg	cgc	cgc	ccc	atc	atc	cgg	ccc	aac	aac	ggc	ttt	tgg	gaa	cag	ctc	662	
Ser	Arg	Arg	Pro	Ile	Ile	Arg	Pro	Asn	Asn	Gly	Phe	Trp	Glu	Gln	Leu		
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atc	aat	tac	gaa	ttc	aag	ctg	ttt	aat	aac	aac	acc	gtg	cgc	atg	atc	710	
Ile	Asn	Tyr	Glu	Phe	Lys	Leu	Phe	Asn	Asn	Asn	Thr	Val	Arg	Met	Ile		
	155					160					165						
aac	tcg	ccg	gta	ggt	aac	atc	cct	gac	atc	tat	gag	aag	gac	cta	cgt	758	
Asn	Ser	Pro	Val	Gly	Asn	Ile	Pro	Asp	Ile	Tyr	Glu	Lys	Asp	Leu	Arg		
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Thr	Met	Ile	Ser	Met	*												
				190													
ttgcaccaag	actgaacttg	aacactgaca	ttttgttagt	aaagaaaacc	ggatggtgcc											872	
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Ala Arg Leu Leu Pro Val Ala His Gln Arg Phe Ser Thr Ala Ser Ala	
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Val Pro Leu Ala Lys Thr Asp Thr Trp Pro Lys Asp Val Gly Ile Leu	
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Ala Leu Glu Val Tyr Phe Pro Ala Gln Tyr Val Asp Gln Thr Asp Leu	
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Glu Lys Tyr Asn Asn Val Glu Ala Gly Lys Tyr Thr Val Gly Leu Gly	
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cag acc cgt atg ggc ttc tgc tca gtc caa gag gac atc aac tcc ctg	399
Gln Thr Arg Met Gly Phe Cys Ser Val Gln Glu Asp Ile Asn Ser Leu	
90 95 100 105	
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Cys Leu Thr Val Val Gln Arg Leu Met Glu Arg Ile Gln Leu Pro Trp	
110 115 120	
gac tct gtg ggc agg ctg gaa gta ggc act gag acc atc att gac aag	495
Asp Ser Val Gly Arg Leu Glu Val Gly Thr Glu Thr Ile Ile Asp Lys	
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Ser Lys Ala Val Lys Thr Val Leu Met Glu Leu Phe Gln Asp Ser Gly	
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Asn Thr Asp Ile Glu Gly Ile Asp Thr Thr Asn Ala Cys Tyr Gly Gly	
155 160 165	
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Thr Ala Ser Leu Phe Asn Ala Ala Asn Trp Met Glu Ser Ser Ser Trp	
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Asp Gly Arg Tyr Ala Met Val Val Cys Gly Asp Ile Ala Val Tyr Pro	
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Ser Gly Asn Ala Arg Pro Thr Gly Gly Ala Gly Ala Val Ala Met Leu	
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Ile Gly Pro Lys Ala Pro Leu Ala Leu Glu Arg Gly Leu Arg Gly Thr	
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His Met Glu Asn Val Tyr Asp Phe Tyr Lys Pro Asn Leu Ala Ser Glu	
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Tyr Pro Ile Val Asp Gly Lys Leu Ser Ile Gln Cys Tyr Leu Arg Ala	
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Thr Tyr Thr Asn Lys Asp Leu Asp Lys Ala Leu Leu Lys Ala Ser Gln	
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Asn Gly Asn Met Tyr Thr Ser Ser Leu Tyr Gly Cys Leu Ala Ser Leu	
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Phe Ser Tyr Gly Ser Gly Leu Ala Ala Ser Phe Phe Ser Phe Arg Val	
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475 480 485	
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Trp Tyr Leu Glu Arg Val Asp Glu Gln His Arg Arg Lys Tyr Ala Arg	
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cgt ccc gtc taa agg tggtctgcag atccatggaa agcttcctgg gaaacgtatg	1654
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 Met Pro Lys Arg Lys Pro Ser Glu Gly Ala Met Ser Asp Lys Val Lys
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 Ala Ser Leu Ser Tyr Arg Gly Asp Gln Gln Asp Tyr Phe Leu Asn Leu
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 Pro Leu Gln Asn Gln Arg Pro Gly Leu Arg Arg Thr Leu Gln Ile Arg
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 Asp Arg Ser Cys Leu Lys *
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 Met Glu Val Ala Glu Val Glu
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Lys	Asp	Met	Val	Lys	Ile	Ser	Met	Asp	Ile	Phe	Val	Arg	Lys	Phe	Gln		
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Ile	Pro	Leu	Ser	Thr	Gly	Tyr	Glu	Lys	Pro	Glu	Lys	Ser	Asp	Pro	Ser		
		490					495					500					
gag	ctt	tca	tgg	cca	aag	tca	cct	gag	tca	tgc	tca	tca	gtg	gca	gag		1770
Glu	Leu	Ser	Trp	Pro	Lys	Ser	Pro	Glu	Ser	Cys	Ser	Ser	Val	Ala	Glu		
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Ser Asn Gly Val Leu Thr Glu Gly Glu Glu Ser Asp Val Glu Ser His	
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Gly Asn Gly Leu Glu Pro Gly Glu Ile Pro Ala Val Pro Ser Gly Glu	
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Arg Asn Ser Phe Lys Val Pro Ser Ile Ala Glu Gly Glu Asn Lys Thr	
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Ser Lys Ser Trp Arg His Pro Leu Ser Arg Pro Pro Ala Arg Ser Pro	
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Met Thr Leu Val Lys Gln Gln Ala Pro Ser Asp Glu Glu Leu Pro Glu	
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gtt ctg tcc att gag gag gaa gtg gaa gaa aca gag tct tgg gcg aaa	2058
Val Leu Ser Ile Glu Glu Glu Val Glu Glu Thr Glu Ser Trp Ala Lys	
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Pro Leu Ile His Leu Trp Gln Thr Lys Ser Pro Asn Phe Ala Ala Glu	
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Gln Glu Tyr Asn Ala Thr Val Ala Arg Met Lys Pro His Cys Ala Ile	
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Cys Thr Leu Leu Met Pro Tyr His Lys Pro Asp Ser Ser Asn Glu Glu	
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Asn Asp Ala Arg Trp Glu Thr Lys Leu Asp Glu Val Val Thr Ser Glu	
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Gly Lys Thr Lys Pro Leu Ile Pro Glu Met Cys Phe Ile Tyr Ser Glu	
680 685 690 695	
gaa aat ata gaa tat tct cca ccc aat gcc ttc ctt gaa gag gat gga	2346
Glu Asn Ile Glu Tyr Ser Pro Pro Asn Ala Phe Leu Glu Glu Asp Gly	
700 705 710	
aca agt ctc ctt att tcc tgt gca aag tgc tgc gta cgg gtt cat gca	2394
Thr Ser Leu Leu Ile Ser Cys Ala Lys Cys Cys Val Arg Val His Ala	
715 720 725	
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Ser Cys Tyr Gly Ile Pro Ser His Glu Ile Cys Asp Gly Trp Leu Cys	
730 735 740	
gcc cgg tgc aaa aga aat gcg tgg aca gca gaa tgc tgt ctc tgc aat	2490
Ala Arg Cys Lys Arg Asn Ala Trp Thr Ala Glu Cys Cys Leu Cys Asn	
745 750 755	
ttg aga gga ggt gct ctt aag caa acg aag aac aat aag tgg gcc cat	2538
Leu Arg Gly Gly Ala Leu Lys Gln Thr Lys Asn Asn Lys Trp Ala His	
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gtc atg tgc gcc gtt gcg gtc cca gaa gtt cga ttc act aat gtc cca	2586

Val Met Cys Ala Val Ala Val Pro Glu Val Arg Phe Thr Asn Val Pro	
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Glu Arg Thr Gln Ile Asp Val Gly Arg Ile Pro Leu Gln Arg Leu Lys	
795 800 805	
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Leu Lys Cys Ile Phe Cys Arg His Arg Val Lys Arg Val Ser Gly Ala	
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Cys Ile Gln Cys Ser Tyr Gly Arg Cys Pro Ala Ser Phe His Val Thr	
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Cys Ala His Ala Ala Gly Val Leu Met Glu Pro Asp Asp Trp Pro Tyr	
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Val Val Asn Ile Thr Cys Phe Arg His Lys Val Asn Pro Asn Val Lys	
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Lys His Arg Asn Thr Arg Tyr Tyr Ser Cys Arg Val Met Ala Val Thr	
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Asp Thr Phe Pro Glu Asp Ile Val Ser Arg Asp Cys Leu Lys Leu Gly	
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Pro Pro Ala Glu Gly Glu Val Val Gln Val Lys Trp Pro Asp Gly Lys	
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ctc tat gga gca aaa tat ttt gga tca aat att gcc cac atg tac cag	3114
Leu Tyr Gly Ala Lys Tyr Phe Gly Ser Asn Ile Ala His Met Tyr Gln	
955 960 965	
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Met Ser Val
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cgt gtg gct ccc cag ggc ctg gag cgg gta cca gga atc ttc atc tcc 702
Arg Val Ala Pro Gln Gly Leu Glu Arg Val Pro Gly Ile Phe Ile Ser
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agt gat gag atc ctc gag gtc aat ggc att gaa gta gcc ggg aag acc      798
Ser Asp Glu Ile Leu Glu Val Asn Gly Ile Glu Val Ala Gly Lys Thr
                      40                      45                      50

ttg gac caa gtg acg gac atg atg gtt gcc aac agc cat aac ctc att      846
Leu Asp Gln Val Thr Asp Met Met Val Ala Asn Ser His Asn Leu Ile
                      55                      60                      65

gtc act gtc aag ccc gcc aac cag cgc aat aac gtg gtg cga ggg gca      894
Val Thr Val Lys Pro Ala Asn Gln Arg Asn Asn Val Val Arg Gly Ala
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tct ggg cgt ttg aca ggt cct ccc tct gca ggg cct ggg cct gct gag      942
Ser Gly Arg Leu Thr Gly Pro Pro Ser Ala Gly Pro Gly Pro Ala Glu
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cct gat agt gac gat gac agc agt gac ctg gtc att gag aac cgc cag      990
Pro Asp Ser Asp Asp Asp Ser Ser Asp Leu Val Ile Glu Asn Arg Gln
100                      105                      110                      115

cct ccc agt tcc aat ggg ctg tct cag ggg ccc ccg tgc tgg gac ctg      1038
Pro Pro Ser Ser Asn Gly Leu Ser Gln Gly Pro Pro Cys Trp Asp Leu
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cac cct ggc tgc cga cat cct ggt acc cgc agc tct ctg ccc tcc ctg      1086
His Pro Gly Cys Arg His Pro Gly Thr Arg Ser Ser Leu Pro Ser Leu
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Asp Asp Gln Glu Gln Ala Ser Ser Gly Trp Gly Ser Arg Ile Arg Gly
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Asp Gly Ser Gly Phe Ser Leu *
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atattctaga ttgtatcttc cagatgtatc ctggagcaag cagctaagtc acttttgttt      180
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Lys Phe Leu His Thr Asn Ser Thr Ser His Thr Trp Pro Phe Ser Ala	
20 25 30	
gtt gct gaa tta ata gat aat gct tat gat cct gat gtg aac gct aaa	381
Val Ala Glu Leu Ile Asp Asn Ala Tyr Asp Pro Asp Val Asn Ala Lys	
35 40 45	
caa ata tgg att gac aaa aca gtg ata aat gac cat ata tgc ttg aca	429
Gln Ile Trp Ile Asp Lys Thr Val Ile Asn Asp His Ile Cys Leu Thr	
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ttc acc gac aat ggg aat ggt atg act tct gat aaa tta cat aaa atg	477
Phe Thr Asp Asn Gly Asn Gly Met Thr Ser Asp Lys Leu His Lys Met	
65 70 75 80	
cta agc ttt ggc ttc agt gac aaa gtc acc atg aat ggt cat gtc cca	525
Leu Ser Phe Gly Phe Ser Asp Lys Val Thr Met Asn Gly His Val Pro	
85 90 95	
gtt gga tta tat ggg aat ggc ttc aag tgc ggt tct atg cgt ctg ggt	573
Val Gly Leu Tyr Gly Asn Gly Phe Lys Ser Gly Ser Met Arg Leu Gly	
100 105 110	
aaa gac gca atc gtt ttt acc aaa aat gga gaa agc atg agc gtg ggc	621
Lys Asp Ala Ile Val Phe Thr Lys Asn Gly Glu Ser Met Ser Val Gly	
115 120 125	
ctt ttg tct cag acc tac ttg gaa gtc ata aaa gcg gag cat gtt gtt	669
Leu Leu Ser Gln Thr Tyr Leu Glu Val Ile Lys Ala Glu His Val Val	
130 135 140	
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Val Pro Ile Val Ala Phe Asn Lys His Arg Gln Met Ile Asn Leu Ala	
145 150 155 160	
gaa tca aaa gcc agc ctt gct gca att ctg gaa cat tct ctg ttt tcc	765
Glu Ser Lys Ala Ser Leu Ala Ala Ile Leu Glu His Ser Leu Phe Ser	
165 170 175	
acg gaa cag aag tta ctg gca gaa ctt gat gct att ata ggc aag aag	813
Thr Glu Gln Lys Leu Leu Ala Glu Leu Asp Ala Ile Ile Gly Lys Lys	
180 185 190	
ggg acg agg atc atc att tgg aat ctt aga agc tac aaa aat gca aca	861
Gly Thr Arg Ile Ile Ile Trp Asn Leu Arg Ser Tyr Lys Asn Ala Thr	
195 200 205	
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Glu Phe Asp Phe Glu Lys Asp Lys Tyr Asp Ile Arg Ile Pro Glu Asp	
210 215 220	
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Leu Asp Glu Ile Thr Gly Lys Lys Gly Tyr Lys Lys Gln Glu Arg Met	
225 230 235 240	
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Asp Gln Ile Ala Pro Glu Ser Asp Tyr Ser Leu Arg Ala Tyr Cys Ser	
245 250 255	

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Ile Leu Tyr Leu Lys Pro Arg Met Gln Ile Ile Leu Arg Gly Gln Lys	
260 265 270	
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Val Lys Thr Gln Leu Val Ser Lys Ser Leu Ala Tyr Ile Glu Arg Asp	
275 280 285	
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Val Tyr Arg Pro Lys Phe Leu Ser Lys Thr Val Arg Ile Thr Phe Gly	
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Phe Asn Cys Arg Asn Lys Asp His Tyr Gly Ile Met Met Tyr His Arg	
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325 330 335	
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Lys Pro Thr His Asn Lys Gln Asp Phe Asp Tyr Thr Asn Glu Tyr Arg	
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Leu Thr Ile Thr Ala Leu Gly Glu Lys Leu Asn Asp Tyr Trp Asn Glu	
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Met Lys Val Lys Lys Asn Thr Glu Tyr Pro Leu Asn Leu Pro Val Glu	
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Asp Ile Asp Met Lys Ser Glu Gln Ser His Val Glu Gln Gly Gly Val	
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act gat caa atc aaa gtg tta caa cag agg ata cta gaa atg aat gac	2445
Thr Asp Gln Ile Lys Val Leu Gln Gln Arg Ile Leu Glu Met Asn Asp	
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Lys Tyr Val Lys Lys Glu Thr Cys His Gln Ser Thr Glu Thr Asp Ala	
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755 760 765	

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770 775 780	
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Tyr Lys Ser Glu Val Glu Leu Leu Glu Met Glu Lys Ser Gln Ile Arg	
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Ser Val Asn His Met Asp Gly Glu Ser Leu Lys Leu Arg Ser Leu Arg	
885 890 895	
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Val Asn Val Gly Gln Leu Leu Ala Met Ile Val Pro Asp Leu Asp Leu	
900 905 910	
cag caa gtg aat tac gat gtt gat gta gtt gat gag att tta gga caa	3021
Gln Gln Val Asn Tyr Asp Val Asp Val Val Asp Glu Ile Leu Gly Gln	
915 920 925	
gtt gtt gaa caa atg agt gaa atc agt agt act taa agta tatgttatgt	3071
Val Val Glu Gln Met Ser Glu Ile Ser Ser Thr *	
930 935 940	
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aagcctgcac atattttttt attgccctag agtactcaag tgtttttcac caagagcttt	3371
tcaggttgcc cctaagcttt gtgcaatttt ttctgggtcc ccaaagtgtg tttttctcta	3431
agtcgagggc tatgccataa tacaaatgga aatgttacct ttgattttct tataaaggag	3491
tttaaataagg attttttaa atgtagtaa cactcctgat acaactctgg ttataagtga	3551
attgagcatt aatgtttctt ttgtataaat tcctgtcctg aaatatttta ttcataaaaa	3611
taaggtaagc aaaaaccaac tccattttgc caggattttg ttgtgctgag attgccaatc	3671

acggttaaac acaaagtgtt tttatagaat gaagaaacag tctttaacag aaaaaaggta 3731
 ttgaaatatt aaatggccac caagtttact ttgaagccca tttttggctg tttagtcagc 3791
 atgaagtggg catgataatt ttttaatat tctttttgtg aaatttcctg tacagccttt 3851
 tgtaggatta ctacaggtta atgtgagttg aggaagacag tctttctcaa acaatactac 3911
 atacctttta ttatattaca aacctaagtg ttttatatcc tagagtcaag gaacaaattt 3971
 ccttaggatt atagtattac atgccataaa atactatgct ttattgggcc catgttttgt 4031
 gcaattttta agagatggct ttctattaag tataaactat gtatatataa gaaccatatt 4091
 ttccacaact aaaatgtgca ttattttttc caaagtttta tcattgctat ttatttttac 4151
 ctttgttttt gaacattcaa tccgttcatt ttgtatgtat gcttaatacg tgcgggcat 4211
 atacagtatt gaatttttac tgtatagtaa ttctggaaag agcaaataaa tgaagattgt 4271
 ttttatttgc ctgataaagt aattgaaagt gtatttttgg tatgaagctg gttttctgtc 4331
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 aactgttc 4399

<210> 554
 <211> 2710
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (122) .. (2119)

<400> 554
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 c atg gac agg ccg gcg gcg gcg gcg gcg ggc tgc gag ggc ggc 166
 Met Asp Arg Pro Ala Ala Ala Ala Ala Gly Cys Glu Gly Gly
 1 5 10 15
 ggg ggc ccg aac ccg ggg ccg gcg ggc ggc agg agg cct cct ccg gcc 214
 Gly Gly Pro Asn Pro Gly Pro Ala Gly Gly Arg Arg Pro Pro Arg Ala
 20 25 30
 gcg ggg ggc gcc acc gcc ggc tcc ccg cag ccc agc gtg gag acc ctg 262
 Ala Gly Gly Ala Thr Ala Gly Ser Arg Gln Pro Ser Val Glu Thr Leu
 35 40 45
 gac agt ccc aca gga tca cat gtt gaa tgg tgt aaa cag ctt ata gct 310
 Asp Ser Pro Thr Gly Ser His Val Glu Trp Cys Lys Gln Leu Ile Ala
 50 55 60
 gct aca att tct agt cag att tca ggt tca gtg aca tca gaa aat gtg 358
 Ala Thr Ile Ser Ser Gln Ile Ser Gly Ser Val Thr Ser Glu Asn Val
 65 70 75
 tcc aga gat tac aag gct cta agg gat gga aat aag ctg gca cag atg 406

Ser	Arg	Asp	Tyr	Lys	Ala	Leu	Arg	Asp	Gly	Asn	Lys	Leu	Ala	Gln	Met	
80					85					90					95	
gaa gag gct cca ctt ttc cca gga gaa tca att aaa gcc att gtg aaa																454
Glu	Glu	Ala	Pro	Leu	Phe	Pro	Gly	Glu	Ser	Ile	Lys	Ala	Ile	Val	Lys	
				100				105					110			
gat gtc atg tat atc tgc cca ttt atg gga gca gtg agt gga acc ctg																502
Asp	Val	Met	Tyr	Ile	Cys	Pro	Phe	Met	Gly	Ala	Val	Ser	Gly	Thr	Leu	
			115				120					125				
aca gtg acg gac ttt aag ctg tac ttc aaa aat gtc gag agg gac ccg																550
Thr	Val	Thr	Asp	Phe	Lys	Leu	Tyr	Phe	Lys	Asn	Val	Glu	Arg	Asp	Pro	
			130				135					140				
cat ttt atc ctt gat gtt ccc ctt gga gtg atc agc aga gtg gag aag																598
His	Phe	Ile	Leu	Asp	Val	Pro	Leu	Gly	Val	Ile	Ser	Arg	Val	Glu	Lys	
			145				150				155					
att gga gca cag agc cat gga gac aat tcc tgt ggt ata gag ata gtg																646
Ile	Gly	Ala	Gln	Ser	His	Gly	Asp	Asn	Ser	Cys	Gly	Ile	Glu	Ile	Val	
160					165				170						175	
tgc aag gat atg agg aac ttg cgg ctt gct tat aaa cag gaa gaa cag																694
Cys	Lys	Asp	Met	Arg	Asn	Leu	Arg	Leu	Ala	Tyr	Lys	Gln	Glu	Glu	Gln	
				180				185					190			
agt aaa cta ggg ata ttt gaa aac ctc aac aaa cat gca ttt cct ctt																742
Ser	Lys	Leu	Gly	Ile	Phe	Glu	Asn	Leu	Asn	Lys	His	Ala	Phe	Pro	Leu	
			195				200					205				
tct aac gga cag gca cta ttt gca ttc agc tat aaa gaa aaa ttt cca																790
Ser	Asn	Gly	Gln	Ala	Leu	Phe	Ala	Phe	Ser	Tyr	Lys	Glu	Lys	Phe	Pro	
			210				215					220				
att aat ggc tgg aaa gtt tat gat cca gta tct gaa tat aag aga cag																838
Ile	Asn	Gly	Trp	Lys	Val	Tyr	Asp	Pro	Val	Ser	Glu	Tyr	Lys	Arg	Gln	
			225			230					235					
ggc ttg cca aat gag agt tgg aaa ata tcc aaa ata aac agt aat tat																886
Gly	Leu	Pro	Asn	Glu	Ser	Trp	Lys	Ile	Ser	Lys	Ile	Asn	Ser	Asn	Tyr	
240					245				250						255	
gag ttc tgt gac acc tac cct gcc atc att gtt gtg cca act agt gta																934
Glu	Phe	Cys	Asp	Thr	Tyr	Pro	Ala	Ile	Ile	Val	Val	Pro	Thr	Ser	Val	
				260				265					270			
aaa gat gat gac ctt tca aaa gtg gca gct ttt cga gca aaa ggc aga																982
Lys	Asp	Asp	Asp	Leu	Ser	Lys	Val	Ala	Ala	Phe	Arg	Ala	Lys	Gly	Arg	
			275					280					285			
gtc cct gtg ttg tca tgg att cat ccg gaa agt caa gca acg att acc																1030
Val	Pro	Val	Leu	Ser	Trp	Ile	His	Pro	Glu	Ser	Gln	Ala	Thr	Ile	Thr	
			290				295					300				
cgt tgc agc cag cca ctt gtg ggt ccc aat gat aag cgc tgc aaa gag																1078
Arg	Cys	Ser	Gln	Pro	Leu	Val	Gly	Pro	Asn	Asp	Lys	Arg	Cys	Lys	Glu	
			305			310					315					
gat gaa aaa tac ttg caa aca ata atg gat gct aac gca cag tca cac																1126
Asp	Glu	Lys	Tyr	Leu	Gln	Thr	Ile	Met	Asp	Ala	Asn	Ala	Gln	Ser	His	
320					325				330						335	
aag ctt atc atc ttt gat gct cga caa aac agt gtc gct gat acc aac																1174

Lys	Leu	Ile	Ile	Phe	Asp	Ala	Arg	Gln	Asn	Ser	Val	Ala	Asp	Thr	Asn	
				340					345					350		
aag	aca	aag	ggt	gga	gga	tat	gaa	agt	gaa	agt	gct	tac	cca	aat	gca	1222
Lys	Thr	Lys	Gly	Gly	Gly	Tyr	Glu	Ser	Glu	Ser	Ala	Tyr	Pro	Asn	Ala	
			355					360					365			
gaa	ctt	gtg	ttc	ttg	gag	atc	cac	aac	att	cat	gtc	atg	cga	gag	tca	1270
Glu	Leu	Val	Phe	Leu	Glu	Ile	His	Asn	Ile	His	Val	Met	Arg	Glu	Ser	
		370					375					380				
cta	cgc	aaa	tta	aaa	gag	att	gtg	tac	cct	tcg	atc	gat	gag	gcg	cgg	1318
Leu	Arg	Lys	Leu	Lys	Glu	Ile	Val	Tyr	Pro	Ser	Ile	Asp	Glu	Ala	Arg	
	385					390					395					
tgg	ctc	tcc	aat	gtg	gat	ggg	acg	cat	tgg	ctg	gaa	tat	ata	agg	atg	1366
Trp	Leu	Ser	Asn	Val	Asp	Gly	Thr	His	Trp	Leu	Glu	Tyr	Ile	Arg	Met	
400					405					410					415	
ctg	ctt	gct	ggg	gca	gta	aga	att	gct	gat	aaa	ata	gaa	tct	ggg	aaa	1414
Leu	Leu	Ala	Gly	Ala	Val	Arg	Ile	Ala	Asp	Lys	Ile	Glu	Ser	Gly	Lys	
			420					425						430		
aca	tct	gtg	gtg	gtg	cat	tgc	agc	gac	ggt	tgg	gac	cga	aca	gcc	cag	1462
Thr	Ser	Val	Val	Val	His	Cys	Ser	Asp	Gly	Trp	Asp	Arg	Thr	Ala	Gln	
			435					440					445			
ctc	aca	tct	ctg	gct	atg	cta	atg	ttg	gac	agt	tac	tac	agg	acc	att	1510
Leu	Thr	Ser	Leu	Ala	Met	Leu	Met	Leu	Asp	Ser	Tyr	Tyr	Arg	Thr	Ile	
		450					455					460				
aaa	gga	ttt	gaa	act	ctc	gta	gaa	aag	gag	tgg	ata	agc	ttt	gga	cac	1558
Lys	Gly	Phe	Glu	Thr	Leu	Val	Glu	Lys	Glu	Trp	Ile	Ser	Phe	Gly	His	
	465					470					475					
agg	ttt	gca	ctg	cga	gtg	ggc	cat	ggt	aat	gac	aac	cat	gcg	gat	gct	1606
Arg	Phe	Ala	Leu	Arg	Val	Gly	His	Gly	Asn	Asp	Asn	His	Ala	Asp	Ala	
480					485				490					495		
gac	cga	tct	ccc	ata	ttt	ctg	cag	ttt	gtt	gat	tgt	gtt	tgg	caa	atg	1654
Asp	Arg	Ser	Pro	Ile	Phe	Leu	Gln	Phe	Val	Asp	Cys	Val	Trp	Gln	Met	
			500					505					510			
aca	agg	cag	ttt	cct	tca	gca	ttc	gag	ttt	aat	gag	cta	ttc	ttg	att	1702
Thr	Arg	Gln	Phe	Pro	Ser	Ala	Phe	Glu	Phe	Asn	Glu	Leu	Phe	Leu	Ile	
			515					520					525			
aca	att	ttg	gat	cac	ctt	tat	agc	tgt	ctt	ttt	ggg	acc	ttt	ttg	tgc	1750
Thr	Ile	Leu	Asp	His	Leu	Tyr	Ser	Cys	Leu	Phe	Gly	Thr	Phe	Leu	Cys	
		530					535					540				
aac	tgt	gaa	cag	cag	cga	ttc	aaa	gag	gat	gta	tat	aca	aag	acg	ata	1798
Asn	Cys	Glu	Gln	Gln	Arg	Phe	Lys	Glu	Asp	Val	Tyr	Thr	Lys	Thr	Ile	
	545					550					555					
tct	tta	tgg	tcg	tat	atc	aat	agc	cag	cta	gac	gag	ttt	tct	aat	ccc	1846
Ser	Leu	Trp	Ser	Tyr	Ile	Asn	Ser	Gln	Leu	Asp	Glu	Phe	Ser	Asn	Pro	
560					565					570					575	
ttc	ttt	gtg	aat	tat	gaa	aac	cac	gtg	tta	tat	cct	gtt	gct	agt	ctg	1894
Phe	Phe	Val	Asn	Tyr	Glu	Asn	His	Val	Leu	Tyr	Pro	Val	Ala	Ser	Leu	
			580					585					590			
agt	cat	ttg	gaa	ttg	tgg	gta	aat	tat	tat	gta	cga	tgg	aat	cca	cgg	1942

Ser	His	Leu	Glu	Leu	Trp	Val	Asn	Tyr	Tyr	Val	Arg	Trp	Asn	Pro	Arg	
			595					600					605			
atg	aga	cct	cag	atg	ccc	att	cac	cag	aat	ctc	aag	gag	ctg	ctg	gcc	1990
Met	Arg	Pro	Gln	Met	Pro	Ile	His	Gln	Asn	Leu	Lys	Glu	Leu	Leu	Ala	
		610					615					620				
gtc	agg	gcg	gag	ctg	cag	aag	cgt	gtg	gag	ggc	cta	cag	cgg	gag	gtg	2038
Val	Arg	Ala	Glu	Leu	Gln	Lys	Arg	Val	Glu	Gly	Leu	Gln	Arg	Glu	Val	
		625				630					635					
gcc	acg	cgc	gcc	gtc	tca	tcc	tca	tct	gag	cgg	ggc	tcc	tcg	ccc	tcc	2086
Ala	Thr	Arg	Ala	Val	Ser	Ser	Ser	Ser	Glu	Arg	Gly	Ser	Ser	Pro	Ser	
		640			645					650					655	
cac	tcc	gcc	acc	tcc	gtc	cac	acc	tcg	gtc	tga	tgggcgag	aaatatgtaa				2137
His	Ser	Ala	Thr	Ser	Val	His	Thr	Ser	Val	*						
			660						665							
tcccctggct	gactaggact	gttaaacata	gtgtggactg	gatgatgcct	tcgacaaacc											2197
agagaagcca	agttgggggg	agctggtgcc	tggagtgggc	cctgtgcacc	tcacctggcg											2257
gaggctgggg	gggctctgtc	agcaggaccc	tagaggagac	tctcattcga	ttttaaagaa											2317
gcacaacggg	tcattttcct	ttgtatgttc	ctagcgcaga	actgttttcta	aaacaacttg											2377
aagtatagtt	ttgttatcta	agcaattttt	gttttaagta	agtaagtgtg	ctagaatgcg											2437
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cactgtattt	caatcatctg	taattaaaat	gatcatatgt	ttgctccctg	gtctttttta											2557
agtaagtaag	taagtatctt	agtagatttt	tcctttgagg	aaaatcggta	ataaaaataac											2617
atggattgaa	tgtttactgt	gcgtcaagca	cagttaatat	atgatgatgt	aaagtaacta											2677
actttatgtg	atttaattca	ttcagtaa	aat	tgt												2710

<210> 555

<211> 2411

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (463) .. (1470)

<220>

<221> misc_feature

<222> (1) ... (2411)

<223> n = a,t,c or g

<400> 555

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accggatgta	agaaccaa	actttcctgc	ctcttaatgc	aaccaaagaa	agcttaggag		180
gcatcgtttt	ttgttttgat	cgctgaatac	tgaattcctg	ccttcctccc	tagttcacgt		240

tccttggggtt	aagttttgaa	ttgtttgttt	acagaccagc	gtttggatct	atgcaaacta	300
aaccctcag	atactgatgc	agttcgtggc	cagatagtgg	tcagtttaca	gacacgagac	360
agaataggaa	ccggcggctc	ggtgggtggac	tgcagaggac	tgttagaaaa	tgaaggaacg	420
gtgtatgaag	actccggggc	tgggaggccg	ctcagctgct	tc	atg gag gaa cca Met Glu Glu Pro 1	474
gcc cct tac aca gat agc acc ggt gct gct gct gga gga ggg aat tgc						522
Ala Pro Tyr Thr Asp Ser Thr Gly Ala Ala Ala Gly Gly Gly Asn Cys						
5			10		15	20
agg ttc gtg gag tcc cca agt caa gat caa aga ctt cag gca cag cgg						570
Arg Phe Val Glu Ser Pro Ser Gln Asp Gln Arg Leu Gln Ala Gln Arg						
	25			30		35
ctt cga aac cct gat gtg cga ggt tca cta cag acg ccc cag aac cga						618
Leu Arg Asn Pro Asp Val Arg Gly Ser Leu Gln Thr Pro Gln Asn Arg						
	40			45		50
cca cac ggc cac cag tcc ccg gaa ctg ccc gaa ggc tac gaa caa aga						666
Pro His Gly His Gln Ser Pro Glu Leu Pro Glu Gly Tyr Glu Gln Arg						
	55			60		65
aca aca gtc cag ggc caa gtt tac ttt ttg cat aca cag act gga gtt						714
Thr Thr Val Gln Gly Gln Val Tyr Phe Leu His Thr Gln Thr Gly Val						
	70			75		80
agc acg tgg cac gac ccc agg ata cca aga gac ctt aac agt gtg aac						762
Ser Thr Trp His Asp Pro Arg Ile Pro Arg Asp Leu Asn Ser Val Asn						
	85			90		95
100						
tgt gat gaa ctt gga cca ctg ccg cca ggc tgg gaa gtc aga agt aca						810
Cys Asp Glu Leu Gly Pro Leu Pro Pro Gly Trp Glu Val Arg Ser Thr						
	105			110		115
gtt tct ggg agg ata tat ttt gta gat cat aat aac cga aca acc cag						858
Val Ser Gly Arg Ile Tyr Phe Val Asp His Asn Asn Arg Thr Thr Gln						
	120			125		130
ttt aca gac cca agg tta cac cac atc atg aat cac cag tgc caa ctc						906
Phe Thr Asp Pro Arg Leu His His Ile Met Asn His Gln Cys Gln Leu						
	135			140		145
aag gag ccc agc cag ccg ctg cca ctg ccc agt gag ggc tct ctg gag						954
Lys Glu Pro Ser Gln Pro Leu Pro Leu Pro Ser Glu Gly Ser Leu Glu						
	150			155		160
gac gag gag ctt cct gcc cag aga tac gaa aga gat cta gtc cag aag						1002
Asp Glu Glu Leu Pro Ala Gln Arg Tyr Glu Arg Asp Leu Val Gln Lys						
	165			170		175
180						
ctg aaa gtc ctc aga cac gaa ctg tcg ctt cag cag ccc caa gct ggt						1050
Leu Lys Val Leu Arg His Glu Leu Ser Leu Gln Gln Pro Gln Ala Gly						
	185			190		195
cat tgc cgc atc gaa gtg tcc aga gaa gaa atc ttt gag gag tct tac						1098
His Cys Arg Ile Glu Val Ser Arg Glu Glu Ile Phe Glu Glu Ser Tyr						
	200			205		210
cgc cag ata atg aag atg cga ccg aaa gac ttg aaa aaa cgg ctg atg						1146

Arg	Gln	Ile	Met	Lys	Met	Arg	Pro	Lys	Asp	Leu	Lys	Lys	Arg	Leu	Met		
		215					220					225					
gtg	aaa	ttc	cgt	ggg	gaa	gaa	ggt	ttg	gat	tac	ggt	ggt	gtg	gcc	agg	1194	
Val	Lys	Phe	Arg	Gly	Glu	Glu	Gly	Leu	Asp	Tyr	Gly	Gly	Val	Ala	Arg		
	230					235					240						
gag	tgg	ctt	tac	ttg	ctg	tgc	cat	gaa	atg	ctg	aat	cct	tat	tac	ggg	1242	
Glu	Trp	Leu	Tyr	Leu	Leu	Cys	His	Glu	Met	Leu	Asn	Pro	Tyr	Tyr	Gly		
	245				250					255					260		
ctc	ttc	cag	tat	tct	acg	gac	aat	att	tac	atg	ttg	caa	ata	aat	ccg	1290	
Leu	Phe	Gln	Tyr	Ser	Thr	Asp	Asn	Ile	Tyr	Met	Leu	Gln	Ile	Asn	Pro		
				265					270					275			
gat	tct	tca	atc	aac	ccc	gac	cac	ttg	tct	tat	ttc	cac	ttt	gtg	ggg	1338	
Asp	Ser	Ser	Ile	Asn	Pro	Asp	His	Leu	Ser	Tyr	Phe	His	Phe	Val	Gly		
			280					285					290				
cgg	atc	atg	ggg	ctg	ggc	tgt	gtt	cca	tgg	aca	cta	cat	caa	cgg	ggg	1386	
Arg	Ile	Met	Gly	Leu	Gly	Cys	Val	Pro	Trp	Thr	Leu	His	Gln	Arg	Gly		
	295					300					305						
ctt	cac	agt	gcc	ctt	cta	caa	gca	gct	gct	ggg	gaa	gcc	cat	cca	gct	1434	
Leu	His	Ser	Ala	Leu	Leu	Gln	Ala	Ala	Ala	Gly	Glu	Ala	His	Pro	Ala		
	310					315				320							
ctc	aga	tct	gga	atc	tgt	gga	ccc	aga	gct	gca	taa	gagc	ttggtgtgga			1484	
Leu	Arg	Ser	Gly	Ile	Cys	Gly	Pro	Arg	Ala	Ala	*						
	325				330				335								
tcctagagaa	cgacatcacg	cctgtactgg	accacacctt	ctgcgtggaa	cacaacgcct											1544	
tcgggcggat	cctgcagcat	gaactgaaac	ccaatgggca	gaaatgtgcc	agtcacagag											1604	
gagaataaga	aagaatacgt	ccggttgat	gtaaactgga	ggtttatgag	aggaatcgaa											1664	
gcccagttct	tagctctgca	gaaggggttc	aatgagctca	tcctcaaca	tctgctgaag											1724	
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cctgcaaagc	tggcagaggc	cctggaattc	cagatcacct	gaggggaaag	ggttgtctct											2264	
ctcctttctg	ttgggggagg	gggatggggg	acttttggtg	gtggctccca	cccatatata											2324	
cctcctttac	catagtactc	ccaccactt	ccatcaccca	tccaataaaa	tgcagccagg											2384	
tttagccttt	ggctttggtc	acacagg														2411	

<210> 556
 <211> 6865
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (183) .. (6386)

<400> 556
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 caacctgcct agacacactc agaaccaggt ttaagaagat cattcccatc ccagagcaga 180
 gc atg gtt cag atg gtg tgt cac ctt ctg gaa tgt ctc ctg acc acg 227
 Met Val Gln Met Val Cys His Leu Leu Glu Cys Leu Leu Thr Thr
 1 5 10 15
 gag gac atc cct gca gac tgc cct aag gaa att tat gag cat tat ttt 275
 Glu Asp Ile Pro Ala Asp Cys Pro Lys Glu Ile Tyr Glu His Tyr Phe
 20 25 30
 gtg ttt gct gcc atc tgg gct ttc ggc gga gca atg gtc caa gat cag 323
 Val Phe Ala Ala Ile Trp Ala Phe Gly Gly Ala Met Val Gln Asp Gln
 35 40 45
 ctt gtg gac tac cgg gca gag ttc agc aaa tgg tgg ctg act gag ttc 371
 Leu Val Asp Tyr Arg Ala Glu Phe Ser Lys Trp Trp Leu Thr Glu Phe
 50 55 60
 aaa aca gtc aag ttt cct tcc caa gga acc atc ttt gac tat tac atc 419
 Lys Thr Val Lys Phe Pro Ser Gln Gly Thr Ile Phe Asp Tyr Tyr Ile
 65 70 75
 gac cca gag acc aag aaa ttc gag cct tgg tcc aag ctc gtc ccc cag 467
 Asp Pro Glu Thr Lys Lys Phe Glu Pro Trp Ser Lys Leu Val Pro Gln
 80 85 90 95
 ttc gaa ttt gac ccc gag atg ccc ttg cag gcg tgt ttg gtg cac acg 515
 Phe Glu Phe Asp Pro Glu Met Pro Leu Gln Ala Cys Leu Val His Thr
 100 105 110
 agt gag acc atc cgt gtg tgc tac ttc atg gag cgg ttg atg gcg cgg 563
 Ser Glu Thr Ile Arg Val Cys Tyr Phe Met Glu Arg Leu Met Ala Arg
 115 120 125
 cag cgg cct gtc atg ctg gtg ggc acg gct ggc act ggc aag tcg gtg 611
 Gln Arg Pro Val Met Leu Val Gly Thr Ala Gly Thr Gly Lys Ser Val
 130 135 140
 ctg gtg gga gct aag ctg gcc agc ctt gac ccc gag gca tac ctg gtg 659
 Leu Val Gly Ala Lys Leu Ala Ser Leu Asp Pro Glu Ala Tyr Leu Val
 145 150 155
 aaa aac gtg cca ttc aac tac tac acc acg tca gca atg ctg cag gct 707
 Lys Asn Val Pro Phe Asn Tyr Tyr Thr Thr Ser Ala Met Leu Gln Ala
 160 165 170 175
 gtc ctg gag aag cct ctg gaa aag aag gct ggc aga aac tat ggc cct 755
 Val Leu Glu Lys Pro Leu Glu Lys Lys Ala Gly Arg Asn Tyr Gly Pro

1517

435	440	445	
gtc aac aca gtg atg gac cta gtt ctc ttt gag gat gcc atg cgc cat Val Asn Thr Val Met Asp Leu Val Leu Phe Glu Asp Ala Met Arg His 450 455 460			1571
gtc tgc cat atc aat cgc atc ttg gag tcc ccg cgg gga aat gct ctg Val Cys His Ile Asn Arg Ile Leu Glu Ser Pro Arg Gly Asn Ala Leu 465 470 475			1619
ctg gtt ggt gta ggt ggg agc ggc aag cag agc ctg aca agg ctg gca Leu Val Gly Val Gly Gly Ser Gly Lys Gln Ser Leu Thr Arg Leu Ala 480 485 490 495			1667
gct ttc atc agc tcc atg gat gtc ttc cag atc aca ctg cgc aaa ggc Ala Phe Ile Ser Ser Met Asp Val Phe Gln Ile Thr Leu Arg Lys Gly 500 505 510			1715
tac cag atc cag gac ttc aag atg gac ctg gcc agc ctg tgt ctg aaa Tyr Gln Ile Gln Asp Phe Lys Met Asp Leu Ala Ser Leu Cys Leu Lys 515 520 525			1763
gct gga gtg aag aat ctc aac aca gtg ttt ctc atg act gat gcc caa Ala Gly Val Lys Asn Leu Asn Thr Val Phe Leu Met Thr Asp Ala Gln 530 535 540			1811
gtg gct gat gag agg ttc ctt gtg ctc atc aat gat ctt ttg gca tct Val Ala Asp Glu Arg Phe Leu Val Leu Ile Asn Asp Leu Leu Ala Ser 545 550 555			1859
ggg gag atc cca gat ctc tac tct gat gat gaa gtt gaa aac atc ata Gly Glu Ile Pro Asp Leu Tyr Ser Asp Asp Glu Val Glu Asn Ile Ile 560 565 570 575			1907
agc aat gtg agg aat gaa gtc aag agc cag ggt ctg gtt gac aac aga Ser Asn Val Arg Asn Glu Val Lys Ser Gln Gly Leu Val Asp Asn Arg 580 585 590			1955
gag aac tgt tgg aag ttc ttt ata gat cgg atc cgg cga cag ctg aag Glu Asn Cys Trp Lys Phe Phe Ile Asp Arg Ile Arg Arg Gln Leu Lys 595 600 605			2003
gtg act ctc tgt ttc tcc cct gtg gga aac aag cta aga gtc cgc agc Val Thr Leu Cys Phe Ser Pro Val Gly Asn Lys Leu Arg Val Arg Ser 610 615 620			2051
agg aag ttc cca gcc att gtg aac tgc aca gcc atc cac tgg ttc cac Arg Lys Phe Pro Ala Ile Val Asn Cys Thr Ala Ile His Trp Phe His 625 630 635			2099
gag tgg cct cag caa gca ttg gag tct gtc agc ctc cgc ttc ttg cag Glu Trp Pro Gln Gln Ala Leu Glu Ser Val Ser Leu Arg Phe Leu Gln 640 645 650 655			2147
aac aca gag ggc att gag ccc aca gta aag cag tcg att agc aaa ttc Asn Thr Glu Gly Ile Glu Pro Thr Val Lys Gln Ser Ile Ser Lys Phe 660 665 670			2195
atg gcc ttt gtc cac aca agt gtc aac caa aca tcc cag tct tat ctg Met Ala Phe Val His Thr Ser Val Asn Gln Thr Ser Gln Ser Tyr Leu 675 680 685			2243
agc aat gaa cag cgc tac aac tat aca act ccc aag tcc ttt ctg gag Ser Asn Glu Gln Arg Tyr Asn Tyr Thr Thr Pro Lys Ser Phe Leu Glu 690 695 700 705			2291

690	695	700	
ttc atc aga ctc tac cag agc ttg ttg cac agg cac aga aaa gag ctc Phe Ile Arg Leu Tyr Gln Ser Leu Leu His Arg His Arg Lys Glu Leu 705 710 715			2339
aag tgc aag aca gag cgg ttg gag aac ggg ctg ctg aag ctg cat agc Lys Cys Lys Thr Glu Arg Leu Glu Asn Gly Leu Leu Lys Leu His Ser 720 725 730 735			2387
acc tct gcc cag gtg gat gat ctg aaa gca aag ctg gct gcc cag gaa Thr Ser Ala Gln Val Asp Asp Leu Lys Ala Lys Leu Ala Ala Gln Glu 740 745 750			2435
gta gag ctg aag cag aaa aat gaa gat gca gac aaa ctg att cag gtc Val Glu Leu Lys Gln Lys Asn Glu Asp Ala Asp Lys Leu Ile Gln Val 755 760 765			2483
gtg ggt gtg gag act gac aaa gtg agc aga gag aaa gcc atg gca gat Val Gly Val Glu Thr Asp Lys Val Ser Arg Glu Lys Ala Met Ala Asp 770 775 780			2531
gaa gag gag cag aag gtg gcc gtc atc atg cta gag gtg aaa cag aag Glu Glu Glu Gln Lys Val Ala Val Ile Met Leu Glu Val Lys Gln Lys 785 790 795			2579
cag aag gac tgt gag gag gac ctg gca aag gct gag cca gca ctc aca Gln Lys Asp Cys Glu Glu Asp Leu Ala Lys Ala Glu Pro Ala Leu Thr 800 805 810 815			2627
gca gcg cag gca gct ctc aac acc ctg aac aag acc aac ctg aca gag Ala Ala Gln Ala Ala Leu Asn Thr Leu Asn Lys Thr Asn Leu Thr Glu 820 825 830			2675
ctg aag tca ttt ggc tct ccg cct ctg gcc gtc agc aat gtc agc gct Leu Lys Ser Phe Gly Ser Pro Pro Leu Ala Val Ser Asn Val Ser Ala 835 840 845			2723
gcg gtg atg gta ctg atg gct ccc agg ggt agg gtg ccc aag gac cgg Ala Val Met Val Leu Met Ala Pro Arg Gly Arg Val Pro Lys Asp Arg 850 855 860			2771
agc tgg aag gct gct aag gtc acc atg gcc aaa gtg gat ggc ttc ctg Ser Trp Lys Ala Ala Lys Val Thr Met Ala Lys Val Asp Gly Phe Leu 865 870 875			2819
gac tcg cta ata aac ttc aac aaa gag aac att cac gag aac tgc ctc Asp Ser Leu Ile Asn Phe Asn Lys Glu Asn Ile His Glu Asn Cys Leu 880 885 890 895			2867
aaa gcc atc agg ccg tat ctg caa gac ccg gag ttc aat cct gag ttt Lys Ala Ile Arg Pro Tyr Leu Gln Asp Pro Glu Phe Asn Pro Glu Phe 900 905 910			2915
gtg gcc acc aaa tcc tat gcg gct gca ggc ctc tgc tcc tgg gtc atc Val Ala Thr Lys Ser Tyr Ala Ala Ala Gly Leu Cys Ser Trp Val Ile 915 920 925			2963
aat att gtg aga ttt tat gag gtg ttc tgt gat gtg gaa ccc aag cgc Asn Ile Val Arg Phe Tyr Glu Val Phe Cys Asp Val Glu Pro Lys Arg 930 935 940			3011
cag gca ctg aac aaa gcc acc gcg gac ctc aca gct gcc cag gag aag Gln Ala Leu Asn Lys Ala Thr Ala Asp Leu Thr Ala Ala Gln Glu Lys			3059

945	950	955	
ctg gct gcc atc aaa gcc aag atc gct cac ctt aat gaa aac ctg gca Leu Ala Ala Ile Lys Ala Lys Ile Ala His Leu Asn Glu Asn Leu Ala 960 965 970 975			3107
aag ctc aca gcc agg ttt gag aaa gca aca gca gac aaa ctc aaa tgt Lys Leu Thr Ala Arg Phe Glu Lys Ala Thr Ala Asp Lys Leu Lys Cys 980 985 990			3155
cag caa gaa gcc gaa gtg acc gca gtc acc atc tcc ctt gcc aac cgc Gln Gln Glu Ala Glu Val Thr Ala Val Thr Ile Ser Leu Ala Asn Arg 995 1000 1005			3203
ctg gtt gga gga ctc gct tct gaa aac gtg agg tgg gca gat gcc gtg Leu Val Gly Gly Leu Ala Ser Glu Asn Val Arg Trp Ala Asp Ala Val 1010 1015 1020			3251
cag aac ttc aaa cag cag gaa agg acg tta tgt gga gac att tta ctt Gln Asn Phe Lys Gln Gln Glu Arg Thr Leu Cys Gly Asp Ile Leu Leu 1025 1030 1035			3299
ata acg gct ttc att tcc tac ctt ggc ttc ttc aca aag aaa tac cgg Ile Thr Ala Phe Ile Ser Tyr Leu Gly Phe Phe Thr Lys Lys Tyr Arg 1040 1045 1050 1055			3347
cag agc ctc ctg gac aga act tgg agg ccc tac ctg agc cag ctg aaa Gln Ser Leu Leu Asp Arg Thr Trp Arg Pro Tyr Leu Ser Gln Leu Lys 1060 1065 1070			3395
act ccc att cca gtc acc cca gcc ctg gat ccc ctg agg atg ctg atg Thr Pro Ile Pro Val Thr Pro Ala Leu Asp Pro Leu Arg Met Leu Met 1075 1080 1085			3443
gat gat gct gac gtg gct gcc tgg cag aac gag ggc ctc cca gcc gac Asp Asp Ala Asp Val Ala Ala Trp Gln Asn Glu Gly Leu Pro Ala Asp 1090 1095 1100			3491
cgc atg tcc gtg gag aat gcc acc att ctc atc aac tgt gag cgc tgg Arg Met Ser Val Glu Asn Ala Thr Ile Leu Ile Asn Cys Glu Arg Trp 1105 1110 1115			3539
cca ctc atg gtt gac cct cag cta caa ggc atc aaa tgg atc aag aat Pro Leu Met Val Asp Pro Gln Leu Gln Gly Ile Lys Trp Ile Lys Asn 1120 1125 1130 1135			3587
aaa tat ggt gaa gat ctc cgg gtc acg cag att ggt cag aaa ggc tac Lys Tyr Gly Glu Asp Leu Arg Val Thr Gln Ile Gly Gln Lys Gly Tyr 1140 1145 1150			3635
ctt caa atc ata gag cag gcc ctg gaa gct gga gct gtg gtg ctg att Leu Gln Ile Ile Glu Gln Ala Leu Glu Ala Gly Ala Val Val Leu Ile 1155 1160 1165			3683
gaa aat cta gag gag tcc att gat cct gtt ctg gga ccc ctg ctt ggg Glu Asn Leu Glu Glu Ser Ile Asp Pro Val Leu Gly Pro Leu Leu Gly 1170 1175 1180			3731
aga gaa gtc att aaa aaa gga cga ttc att aaa att gga gac aaa gaa Arg Glu Val Ile Lys Lys Gly Arg Phe Ile Lys Ile Gly Asp Lys Glu 1185 1190 1195			3779
tgt gaa tac aat ccc aag ttc cgg ctc atc ctc cac acc aag ctg gct Cys Glu Tyr Asn Pro Lys Phe Arg Leu Ile Leu His Thr Lys Leu Ala			3827

1200	1205	1210	1215	
aat cct cac tac cag cct gag ctg cag gct cag gcc acc ctg atc aac				3875
Asn Pro His Tyr Gln Pro Glu Leu Gln Ala Gln Ala Thr Leu Ile Asn				
1220	1225	1230		
ttc acc gtg acc agg gat ggc ctg gag gac cag ttg ctg gcc gct gtg				3923
Phe Thr Val Thr Arg Asp Gly Leu Glu Asp Gln Leu Leu Ala Ala Val				
1235	1240	1245		
gtc agc atg gag agg cca gac ttg gag cag ctg aag tcc gat ctc aca				3971
Val Ser Met Glu Arg Pro Asp Leu Glu Gln Leu Lys Ser Asp Leu Thr				
1250	1255	1260		
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Lys Gln Gln Asn Gly Phe Lys Ile Thr Leu Lys Thr Leu Glu Asp Ser				
1265	1270	1275		
ctt ctc tct cgc ctc tcc tcc gcc tct ggg aac ttc ctg gga gaa aca				4067
Leu Leu Ser Arg Leu Ser Ser Ala Ser Gly Asn Phe Leu Gly Glu Thr				
1280	1285	1290	1295	
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Val Leu Val Glu Asn Leu Glu Ile Thr Lys Gln Thr Ala Ala Glu-Val				
1300	1305	1310		
gag aaa aag gtc cag gag gcc aag gtg act gaa gtg aaa atc aac gag				4163
Glu Lys Lys Val Gln Glu Ala Lys Val Thr Glu Val Lys Ile Asn Glu				
1315	1320	1325		
gcc cga gag cac tac cgg cca gca gct gcc agg gcc tca ctg ctc tac				4211
Ala Arg Glu His Tyr Arg Pro Ala Ala Ala Arg Ala Ser Leu Leu Tyr				
1330	1335	1340		
ttc atc atg aac gac ctc agc aag atc cat cca atg tac cag ttt tct				4259
Phe Ile Met Asn Asp Leu Ser Lys Ile His Pro Met Tyr Gln Phe Ser				
1345	1350	1355		
ctc aag gcc ttc agt atc gtc ttc cag aag gct gtg gag agg gct gct				4307
Leu Lys Ala Phe Ser Ile Val Phe Gln Lys Ala Val Glu Arg Ala Ala				
1360	1365	1370	1375	
cct gac gaa agc ctc agg gag cgg gtg gcc aac cta ata gac agc ata				4355
Pro Asp Glu Ser Leu Arg Glu Arg Val Ala Asn Leu Ile Asp Ser Ile				
1380	1385	1390		
acc ttc tct gtg tac cag tac acc atc cgc ggg ctc ttt gag tgt gat				4403
Thr Phe Ser Val Tyr Gln Tyr Thr Ile Arg Gly Leu Phe Glu Cys Asp				
1395	1400	1405		
aag ctg acc tac ctt gcc cag ctc acc ttt cag att ctc ctc atg aac				4451
Lys Leu Thr Tyr Leu Ala Gln Leu Thr Phe Gln Ile Leu Leu Met Asn				
1410	1415	1420		
cga gaa gtc aat gca gtg gag ttg gat ttc ctg ctt cga tct cca gtg				4499
Arg Glu Val Asn Ala Val Glu Leu Asp Phe Leu Leu Arg Ser Pro Val				
1425	1430	1435		
cag acg ggc acc gcc agc ccc gtg gag ttc ctc tcc cat cag gcg tgg				4547
Gln Thr Gly Thr Ala Ser Pro Val Glu Phe Leu Ser His Gln Ala Trp				
1440	1445	1450	1455	
gga gct gtc aag gta ctt tca tca atg gaa gaa ttc tct aat ctg gat				4595
Gly Ala Val Lys Val Leu Ser Ser Met Glu Glu Phe Ser Asn Leu Asp				

1460	1465	1470	
cgg gac ata gag gga tct gct aag agc tgg aaa aag ttt gtg gag tcc Arg Asp Ile Glu Gly Ser Ala Lys Ser Trp Lys Lys Phe Val Glu Ser 1475	1480	1485	4643
gaa tgt cct gag aaa gag aag ctc cca cag gag tgg aag aac aag aca Glu Cys Pro Glu Lys Glu Lys Leu Pro Gln Glu Trp Lys Asn Lys Thr 1490	1495	1500	4691
gcc ctg cag cgc ctc tgc atg ctg aga gcc atg cgg ccc gac cgg atg Ala Leu Gln Arg Leu Cys Met Leu Arg Ala Met Arg Pro Asp Arg Met 1505	1510	1515	4739
acc tat gct ttg cga gat ttt gtt gaa gag aag tta gga agc aaa tac Thr Tyr Ala Leu Arg Asp Phe Val Glu Glu Lys Leu Gly Ser Lys Tyr 1520	1525	1530	4787
gtg gtg gga aga gcc cta gat ttt gca acc tca ttt gaa gaa tcg gga Val Val Gly Arg Ala Leu Asp Phe Ala Thr Ser Phe Glu Glu Ser Gly 1540	1545	1550	4835
cca gcc act cct atg ttt ttc atc ctg tct cca ggg gtg gac cca ctg Pro Ala Thr Pro Met Phe Phe Ile Leu Ser Pro Gly Val Asp Pro Leu 1555	1560	1565	4883
aag gat gta gaa agt caa gga aga aaa ctt gga tac acc ttc aac aat Lys Asp Val Glu Ser Gln Gly Arg Lys Leu Gly Tyr Thr Phe Asn Asn 1570	1575	1580	4931
cag aac ttt cac aac gtg tct ttg ggg caa gga cag gaa gtg gtg gct Gln Asn Phe His Asn Val Ser Leu Gly Gln Gly Gln Glu Val Val Ala 1585	1590	1595	4979
gag gct gcg ctg gac ctc gct gcc aag aaa ggt cac tgg gtt att ttg Glu Ala Ala Leu Asp Leu Ala Ala Lys Lys Gly His Trp Val Ile Leu 1600	1605	1610	5027
cag aac act ctg gag atg tgt tct cgg gag acg gag ttt aag agc atc Gln Asn Thr Leu Glu Met Cys Ser Arg Glu Thr Glu Phe Lys Ser Ile 1620	1625	1630	5075
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ctc act atc tct gtg aat gtc ctc tac aac ttc ctg gag gcc aac gca Leu Thr Ile Ser Val Asn Val Leu Tyr Asn Phe Leu Glu Ala Asn Ala 1665	1670	1675	5219
aag gtc ccc tat gat gat ttg cgc tac ctg ttt gga gag atc atg tat Lys Val Pro Tyr Asp Asp Leu Arg Tyr Leu Phe Gly Glu Ile Met Tyr 1680	1685	1690	5267
gga ggc cat atc aca gat gac tgg gac aga aga ctc tgc aga acc tac Gly Gly His Ile Thr Asp Asp Trp Asp Arg Arg Leu Cys Arg Thr Tyr 1700	1705	1710	5315
ctg ggg gaa ttc att cga cca gaa atg tta gaa gga gaa ctg tct ttg Leu Gly Glu Phe Ile Arg Pro Glu Met Leu Glu Gly Glu Leu Ser Leu			5363

1715	1720	1725	
gcc cca ggg ttc cca ctc cca ggc aac atg gac tac aat ggt tat cat Ala Pro Gly Phe Pro Leu Pro Gly Asn Met Asp Tyr Asn Gly Tyr His 1730	1735	1740	5411
cag tac atc gat gct gag ctg ccc cca gaa tcc ccc tac ctc tat ggc Gln Tyr Ile Asp Ala Glu Leu Pro Pro Glu Ser Pro Tyr Leu Tyr Gly 1745	1750	1755	5459
ctc cac ccg aac gca gag att ggc ttc ctg acc caa acc tca gaa aag Leu His Pro Asn Ala Glu Ile Gly Phe Leu Thr Gln Thr Ser Glu Lys 1760	1765	1770	5507
ctc ttc cgc act gtg ctg gag ctg cag cct cgg gac agc cag gcc aga Leu Phe Arg Thr Val Leu Glu Leu Gln Pro Arg Asp Ser Gln Ala Arg 1780	1785	1790	5555
gac gga gcg ggc gcc aca aga gaa gaa aag gtc aag gca ctt ctg gaa Asp Gly Ala Gly Ala Thr Arg Glu Glu Lys Val Lys Ala Leu Leu Glu 1795	1800	1805	5603
gaa ata ttg gag cgg gtg aca gac gag ttt aac atc cca gaa ctg atg Glu Ile Leu Glu Arg Val Thr Asp Glu Phe Asn Ile Pro Glu Leu Met 1810	1815	1820	5651
gcc aaa gtg gag gag cgc acc cct tac att gta gtt gcc ttc cag gag Ala Lys Val Glu Glu Arg Thr Pro Tyr Ile Val Val Ala Phe Gln Glu 1825	1830	1835	5699
tgt ggc cgg atg aat atc ctc acc aga gag att cag cgc tca ctg agg Cys Gly Arg Met Asn Ile Leu Thr Arg Glu Ile Gln Arg Ser Leu Arg 1840	1845	1850	5747
gag ctg gag ctc ggc tta aag ggg gag ctg act atg acc agc cac atg Glu Leu Glu Leu Gly Leu Lys Gly Glu Leu Thr Met Thr Ser His Met 1860	1865	1870	5795
gag aac tta cag aat gcc ctg tac ttc gat atg gtg cca gag tcc tgg Glu Asn Leu Gln Asn Ala Leu Tyr Phe Asp Met Val Pro Glu Ser Trp 1875	1880	1885	5843
gct aga cga gcc tac cct tcc aca gca ggc ctg gca gcc tgg ttt cca Ala Arg Arg Ala Tyr Pro Ser Thr Ala Gly Leu Ala Ala Trp Phe Pro 1890	1895	1900	5891
gac ctc ctc aac aga atc aag gag cta gag gct tgg acg ggt gac ttt Asp Leu Leu Asn Arg Ile Lys Glu Leu Glu Ala Trp Thr Gly Asp Phe 1905	1910	1915	5939
aca atg ccc tcc act gtg tgg ctg aca ggc ttc ttc aac ccc cag tcg Thr Met Pro Ser Thr Val Trp Leu Thr Gly Phe Phe Asn Pro Gln Ser 1920	1925	1930	5987
ttc ctg act gcc atc atg cag tcc acg gct cgc aag aat gag tgg cca Phe Leu Thr Ala Ile Met Gln Ser Thr Ala Arg Lys Asn Glu Trp Pro 1940	1945	1950	6035
ctg gac cag atg gcc ctg caa tgt gac atg acg aag aag aac aga gaa Leu Asp Gln Met Ala Leu Gln Cys Asp Met Thr Lys Lys Asn Arg Glu 1955	1960	1965	6083
gag ttt agg agt cct cct cgg gaa ggg gcc tac atc cat ggc ctc ttc Glu Phe Arg Ser Pro Pro Arg Glu Gly Ala Tyr Ile His Gly Leu Phe			6131

1970	1975	1980	
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aag ctg aag gat ctg aca ccc cct atg cct gtg atg ttc atc aag gcc Lys Leu Lys Asp Leu Thr Pro Pro Met Pro Val Met Phe Ile Lys Ala 2000	2005	2010	6227
att cct gca gat aag cag gac tgc cgc agt gtc tat tcc tgt cct gtg Ile Pro Ala Asp Lys Gln Asp Cys Arg Ser Val Tyr Ser Cys Pro Val 2020	2025	2030	6275
tac aag act agt cag cgg gga ccc acc tac gtg tgg act ttc aac ctg Tyr Lys Thr Ser Gln Arg Gly Pro Thr Tyr Val Trp Thr Phe Asn Leu 2035	2040	2045	6323
aag act aag gaa aac cca tcc aag tgg gtt ctg gct gga gta gcc ttg Lys Thr Lys Glu Asn Pro Ser Lys Trp Val Leu Ala Gly Val Ala Leu 2050	2055	2060	6371
ctt ctc cag att tag catcctgcag agccaccgag aaaataaaaa agctgggctt Leu Leu Gln Ile *			6426
2065			
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caacctgcct agacacactc agaaccaggt ttaagaagat cattcccatc ccagagcaga	180
gc atg gtt cag atg gtg tgt cac ctt ctg gaa tgt ctc ctg acc acg	227
Met Val Gln Met Val Cys His Leu Leu Glu Cys Leu Leu Thr Thr	
1 5 10 15	

gag gac atc cct gca gac tgc cct aag gaa att tat gag cat tat ttt	275
Glu Asp Ile Pro Ala Asp Cys Pro Lys Glu Ile Tyr Glu His Tyr Phe	
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gtg ttt gct gcc atc tgg gct ttc ggc gga gca atg gtc caa gat cag	323
Val Phe Ala Ala Ile Trp Ala Phe Gly Gly Ala Met Val Gln Asp Gln	
35 40 45	
ctt gtg gac tac cgg gca gag ttc agc aaa tgg tgg ctg act gag ttc	371
Leu Val Asp Tyr Arg Ala Glu Phe Ser Lys Trp Trp Leu Thr Glu Phe	
50 55 60	
aaa aca gtc aag ttt cct tcc caa gga acc atc ttt gac tat tac atc	419
Lys Thr Val Lys Phe Pro Ser Gln Gly Thr Ile Phe Asp Tyr Tyr Ile	
65 70 75	
gac cca gag acc aag aaa ttc gag cct tgg tcc aag ctc gtc ccc cag	467
Asp Pro Glu Thr Lys Lys Phe Glu Pro Trp Ser Lys Leu Val Pro Gln	
80 85 90 95	
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Phe Glu Phe Asp Pro Glu Met Pro Leu Gln Ala Cys Leu Val His Thr	
100 105 110	
agt gag acc atc cgt gtg tgc tac ttc atg gag cgg ttg atg gcg cgg	563
Ser Glu Thr Ile Arg Val Cys Tyr Phe Met Glu Arg Leu Met Ala Arg	
115 120 125	
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Gln Arg Pro Val Met Leu Val Gly Thr Ala Gly Thr Gly Lys Ser Val	
130 135 140	
ctg gtg gga gct aag ctg gcc agc ctt gac ccc gag gca tac ctg gtg	659
Leu Val Gly Ala Lys Leu Ala Ser Leu Asp Pro Glu Ala Tyr Leu Val	
145 150 155	
aaa aac gtg cca ttc aac tac tac acc acg tca gca atg ctg cag gct	707
Lys Asn Val Pro Phe Asn Tyr Tyr Thr Thr Ser Ala Met Leu Gln Ala	
160 165 170 175	
gtc ctg gag aag cct ctg gaa aag aag gct ggc aga aac tat ggc cct	755
Val Leu Glu Lys Pro Leu Glu Lys Lys Ala Gly Arg Asn Tyr Gly Pro	
180 185 190	
cca ggg aac aag aaa ctc atc tat ttc att gat gac atg aac atg cct	803
Pro Gly Asn Lys Lys Leu Ile Tyr Phe Ile Asp Asp Met Asn Met Pro	
195 200 205	
gag gtg gat gcc tac ggg acg gtg cag ccc cac acc atc atc cgg cag	851
Glu Val Asp Ala Tyr Gly Thr Val Gln Pro His Thr Ile Ile Arg Gln	
210 215 220	
cat ctg gac tat ggc cac tgg tat gat cgg agc aag ctg tcc cta aag	899
His Leu Asp Tyr Gly His Trp Tyr Asp Arg Ser Lys Leu Ser Leu Lys	
225 230 235	
gag atc aca aat gta cag tat gtt tcc tgt atg aac ccc acg gca ggc	947
Glu Ile Thr Asn Val Gln Tyr Val Ser Cys Met Asn Pro Thr Ala Gly	
240 245 250 255	
agc ttc acc atc aac ccc cgg ctt cag cgt cac ttc agc gtg ttt gtc	995
Ser Phe Thr Ile Asn Pro Arg Leu Gln Arg His Phe Ser Val Phe Val	
260 265 270	

ctc tcc ttc ccg ggg gca gat gcc ctg tcc tct atc tac agc atc atc	1043
Leu Ser Phe Pro Gly Ala Asp Ala Leu Ser Ser Ile Tyr Ser Ile Ile	
275 280 285	
ctc act cag cat ctg aag ctc gga aac ttc ccg gcg tcc ctg cag aaa	1091
Leu Thr Gln His Leu Lys Leu Gly Asn Phe Pro Ala Ser Leu Gln Lys	
290 295 300	
tcc atc ccc cca ctg atc gat ctg gcc ctc gcc ttc cac cag aaa att	1139
Ser Ile Pro Pro Leu Ile Asp Leu Ala Leu Ala Phe His Gln Lys Ile	
305 310 315	
gct acc acc ttc cta ccc aca gga atc aaa ttc cac tac atc ttc aac	1187
Ala Thr Thr Phe Leu Pro Thr Gly Ile Lys Phe His Tyr Ile Phe Asn	
320 325 330 335	
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Leu Arg Asp Phe Ala Asn Ile Phe Gln Gly Ile Leu Phe Ser Ser Val	
340 345 350	
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Glu Cys Val Lys Ser Thr Trp Asp Leu Ile Arg Leu Tyr Leu His Glu	
355 360 365	
tca aat cga gtt tat cgg gat aag atg gta gaa gaa aag gac ttt gat	1331
Ser Asn Arg Val Tyr Arg Asp Lys Met Val Glu Glu Lys Asp Phe Asp	
370 375 380	
ctt ttt gat aaa atc cag aca gaa gtg ctc aag aaa act ttt gat gat	1379
Leu Phe Asp Lys Ile Gln Thr Glu Val Leu Lys Lys Thr Phe Asp Asp	
385 390 395	
att gaa gac cct gtg gag cag acc caa agc ccg aac ctg tat tgt cac	1427
Ile Glu Asp Pro Val Glu Gln Thr Gln Ser Pro Asn Leu Tyr Cys His	
400 405 410 415	
ttt gca aat ggt att ggg gag ccc aaa tac atg cct gta cag tct tgg	1475
Phe Ala Asn Gly Ile Gly Glu Pro Lys Tyr Met Pro Val Gln Ser Trp	
420 425 430	
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Glu Leu Leu Thr Gln Thr Leu Val Glu Ala Leu Glu Asn His Asn Glu	
435 440 445	
gtc aac aca gtg atg gac cta gtt ctc ttt gag gat gcc atg cgc cat	1571
Val Asn Thr Val Met Asp Leu Val Leu Phe Glu Asp Ala Met Arg His	
450 455 460	
gtc tgc cat atc aat cgc atc ttg gag tcc ccg cgg gga aat gct ctg	1619
Val Cys His Ile Asn Arg Ile Leu Glu Ser Pro Arg Gly Asn Ala Leu	
465 470 475	
ctg gtt ggt gta ggt ggg agc ggc aag cag agc ctg aca agg ctg gca	1667
Leu Val Gly Val Gly Gly Ser Gly Lys Gln Ser Leu Thr Arg Leu Ala	
480 485 490 495	
gct ttc atc agc tcc atg gat gtc ttc cag atc aca ctg cgc aaa ggc	1715
Ala Phe Ile Ser Ser Met Asp Val Phe Gln Ile Thr Leu Arg Lys Gly	
500 505 510	
tac cag atc cag gac ttc aag atg gac ctg gcc agc ctg tgt ctg aaa	1763
Tyr Gln Ile Gln Asp Phe Lys Met Asp Leu Ala Ser Leu Cys Leu Lys	
515 520 525	

gct gga gtg aag aat ctc aac aca gtg ttt ctc atg act gat gcc caa Ala Gly Val Lys Asn Leu Asn Thr Val Phe Leu Met Thr Asp Ala Gln 530 535 540	1811
gtg gct gat gag agg ttc ctt gtg ctc atc aat gat ctt ttg gca tct Val Ala Asp Glu Arg Phe Leu Val Leu Ile Asn Asp Leu Leu Ala Ser 545 550 555	1859
ggg gag atc cca gat ctc tac tct gat gat gaa gtt gaa aac atc ata Gly Glu Ile Pro Asp Leu Tyr Ser Asp Asp Glu Val Glu Asn Ile Ile 560 565 570 575	1907
agc aat gtg agg aat gaa gtc aag agc cag ggt ctg gtt gac aac aga Ser Asn Val Arg Asn Glu Val Lys Ser Gln Gly Leu Val Asp Asn Arg 580 585 590	1955
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atg gcc ttt gtc cac aca agt gtc aac caa aca tcc cag tct tat ctg Met Ala Phe Val His Thr Ser Val Asn Gln Thr Ser Gln Ser Tyr Leu 675 680 685	2243
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acc tct gcc cag gtg gat gat ctg aaa gca aag ctg gct gcc cag gaa Thr Ser Ala Gln Val Asp Asp Leu Lys Ala Lys Leu Ala Ala Gln Glu 740 745 750	2435
gta gag ctg aag cag aaa aat gaa gat gca gac aaa ctg att cag gtc Val Glu Leu Lys Gln Lys Asn Glu Asp Ala Asp Lys Leu Ile Gln Val 755 760 765	2483
gtg ggt gtg gag act gac aaa gtg agc aga gag aaa gcc atg gca gat Val Gly Val Glu Thr Asp Lys Val Ser Arg Glu Lys Ala Met Ala Asp 770 775 780	2531

gaa gag gag cag aag gtg gcc gtc atc atg cta gag gtg aaa cag aag Glu Glu Glu Gln Lys Val Ala Val Ile Met Leu Glu Val Lys Gln Lys 785 790 795	2579
cag aag gac tgt gag gag gac ctg gca aag gct gag cca gca ctc aca Gln Lys Asp Cys Glu Glu Asp Leu Ala Lys Ala Glu Pro Ala Leu Thr 800 805 810 815	2627
gca gcg cag gca gct ctc aac acc ctg aac aag acc aac ctg aca gag Ala Ala Gln Ala Ala Leu Asn Thr Leu Asn Lys Thr Asn Leu Thr Glu 820 825 830	2675
ctg aag tca ttt ggc tct ccg cct ctg gcc gtc agc aat gtc agc gct Leu Lys Ser Phe Gly Ser Pro Pro Leu Ala Val Ser Asn Val Ser Ala 835 840 845	2723
gcg gtg atg gta ctg atg gct ccc agg ggt agg gtg ccc aag gac cgg Ala Val Met Val Leu Met Ala Pro Arg Gly Arg Val Pro Lys Asp Arg 850 855 860	2771
agc tgg aag gct gct aag gtc acc atg gcc aaa gtg gat ggc ttc ctg Ser Trp Lys Ala Ala Lys Val Thr Met Ala Lys Val Asp Gly Phe Leu 865 870 875	2819
gac tcg cta ata aac ttc aac aaa gag aac att cac gag aac tgc ctc Asp Ser Leu Ile Asn Phe Asn Lys Glu Asn Ile His Glu Asn Cys Leu 880 885 890 895	2867
aaa gcc atc agg ccg tat ctg caa gac ccg gag ttc aat cct gag ttt Lys Ala Ile Arg Pro Tyr Leu Gln Asp Pro Glu Phe Asn Pro Glu Phe 900 905 910	2915
gtg gcc acc aaa tcc tat gcg gct gca ggc ctc tgc tcc tgg gtc atc Val Ala Thr Lys Ser Tyr Ala Ala Gly Leu Cys Ser Trp Val Ile 915 920 925	2963
aat att gtg aga ttt tat gag gtg ttc tgt gat gtg gaa ccc aag cgc Asn Ile Val Arg Phe Tyr Glu Val Phe Cys Asp Val Glu Pro Lys Arg 930 935 940	3011
cag gca ctg aac aaa gcc acc gcg gac ctc aca gct gcc cag gag aag Gln Ala Leu Asn Lys Ala Thr Ala Asp Leu Thr Ala Ala Gln Glu Lys 945 950 955	3059
ctg gct gcc atc aaa gcc aag atc gct cac ctt aat gaa aac ctg gca Leu Ala Ala Ile Lys Ala Lys Ile Ala His Leu Asn Glu Asn Leu Ala 960 965 970 975	3107
aag ctc aca gcc agg ttt gag aaa gca aca gca gac aaa ctc aaa tgt Lys Leu Thr Ala Arg Phe Glu Lys Ala Thr Ala Asp Lys Leu Lys Cys 980 985 990	3155
cag caa gaa gcc gaa gtg acc gca gtc acc atc tcc ctt gcc aac cgc Gln Gln Glu Ala Glu Val Thr Ala Val Thr Ile Ser Leu Ala Asn Arg 995 1000 1005	3203
ctg gtt gga gga ctc gct tct gaa aac gtg agg tgg gca gat gcc gtg Leu Val Gly Gly Leu Ala Ser Glu Asn Val Arg Trp Ala Asp Ala Val 1010 1015 1020	3251
cag aac ttc aaa cag cag gaa agg acg tta tgt gga gac att tta ctt Gln Asn Phe Lys Gln Gln Glu Arg Thr Leu Cys Gly Asp Ile Leu Leu 1025 1030 1035	3299

ata acg gct ttc att tcc tac ctt ggc ttc ttc aca aag aaa tac cgg	3347
Ile Thr Ala Phe Ile Ser Tyr Leu Gly Phe Phe Thr Lys Lys Tyr Arg	
1040 1045 1050 1055	
cag agc ctc ctg gac aga act tgg agg ccc tac ctg agc cag ctg aaa	3395
Gln Ser Leu Leu Asp Arg Thr Trp Arg Pro Tyr Leu Ser Gln Leu Lys	
1060 1065 1070	
act ccc att cca gtc acc cca gcc ctg gat ccc ctg agg atg ctg atg	3443
Thr Pro Ile Pro Val Thr Pro Ala Leu Asp Pro Leu Arg Met Leu Met	
1075 1080 1085	
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Asp Asp Ala Asp Val Ala Ala Trp Gln Asn Glu Gly Leu Pro Ala Asp	
1090 1095 1100	
cgc atg tcc gtg gag aat gcc acc att ctc atc aac tgt gag cgc tgg	3539
Arg Met Ser Val Glu Asn Ala Thr Ile Leu Ile Asn Cys Glu Arg Trp	
1105 1110 1115	
cca ctc atg gtt gac cct cag cta caa ggc atc aaa tgg atc aag aat	3587
Pro Leu Met Val Asp Pro Gln Leu Gln Gly Ile Lys Trp Ile Lys Asn	
1120 1125 1130 1135	
aaa tat ggt gaa gat ctc cgg gtc acg cag att ggt cag aaa ggc tac	3635
Lys Tyr Gly Glu Asp Leu Arg Val Thr Gln Ile Gly Gln Lys Gly Tyr	
1140 1145 1150	
ctt caa atc ata gag cag gcc ctg gaa gct gga gct gtg gtg ctg att	3683
Leu Gln Ile Ile Glu Gln Ala Leu Glu Ala Gly Ala Val Val Leu Ile	
1155 1160 1165	
gaa aat cta gag gag tcc att gat cct gtt ctg gga ccc ctg ctt ggg	3731
Glu Asn Leu Glu Glu Ser Ile Asp Pro Val Leu Gly Pro Leu Leu Gly	
1170 1175 1180	
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Arg Glu Val Ile Lys Lys Gly Arg Phe Ile Lys Ile Gly Asp Lys Glu	
1185 1190 1195	
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Cys Glu Tyr Asn Pro Lys Phe Arg Leu Ile Leu His Thr Lys Leu Ala	
1200 1205 1210 1215	
aat cct cac tac cag cct gag ctg cag gct cag gcc acc ctg atc aac	3875
Asn Pro His Tyr Gln Pro Glu Leu Gln Ala Gln Ala Thr Leu Ile Asn	
1220 1225 1230	
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Phe Thr Val Thr Arg Asp Gly Leu Glu Asp Gln Leu Leu Ala Ala Val	
1235 1240 1245	
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Val Ser Met Glu Arg Pro Asp Leu Glu Gln Leu Lys Ser Asp Leu Thr	
1250 1255 1260	
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Lys Gln Gln Asn Gly Phe Lys Ile Thr Leu Lys Thr Leu Glu Asp Ser	
1265 1270 1275	
ctt ctc tct cgc ctc tcc tcc gcc tct ggg aac ttc ctg gga gaa aca	4067
Leu Leu Ser Arg Leu Ser Ser Ala Ser Gly Asn Phe Leu Gly Glu Thr	
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ttc atc atg aac gac ctc agc aag atc cat cca atg tac cag ttt tct Phe Ile Met Asn Asp Leu Ser Lys Ile His Pro Met Tyr Gln Phe Ser 1345 1350 1355	4259
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cct gac gaa agc ctc agg gag cgg gtg gcc aac cta ata gac agc ata Pro Asp Glu Ser Leu Arg Glu Arg Val Ala Asn Leu Ile Asp Ser Ile 1380 1385 1390	4355
acc ttc tct gtg tac cag tac acc atc cgc ggg ctc ttt gag tgt gat Thr Phe Ser Val Tyr Gln Tyr Thr Ile Arg Gly Leu Phe Glu Cys Asp 1395 1400 1405	4403
aag ctg acc tac ctt gcc cag ctc acc ttt cag att ctc ctc atg aac Lys Leu Thr Tyr Leu Ala Gln Leu Thr Phe Gln Ile Leu Leu Met Asn 1410 1415 1420	4451
cga gaa gtc aat gca gtg gag ttg gat ttc ctg ctt cga tct cca gtg Arg Glu Val Asn Ala Val Glu Leu Asp Phe Leu Leu Arg Ser Pro Val 1425 1430 1435	4499
cag acg ggc acc gcc agc ccc gtg gag ttc ctc tcc cat cag gcg tgg Gln Thr Gly Thr Ala Ser Pro Val Glu Phe Leu Ser His Gln Ala Trp 1440 1445 1450 1455	4547
gga gct gtc aag gta ctt tca tca atg gaa gaa ttc tct aat ctg gat Gly Ala Val Lys Val Leu Ser Ser Met Glu Glu Phe Ser Asn Leu Asp 1460 1465 1470	4595
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Lys Asp Val Glu Ser Gln Gly Arg Lys Leu Gly Tyr Thr Phe Asn Asn	
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Leu Glu Glu His Ser Glu Asn Ser His Pro Glu Phe Arg Val Phe Met	
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Ser Ala Glu Pro Ala Pro Ser Pro Glu Gly His Ile Ile Pro Gln Gly	
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Ile Leu Glu Asn Ser Ile Lys Ile Thr Asn Glu Pro Pro Thr Gly Met	
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cat gcc aac ctg cac aag gcc ctg gac aac ttc act cag gac act ctg	5267
His Ala Asn Leu His Lys Ala Leu Asp Asn Phe Thr Gln Asp Thr Leu	
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Cys Tyr Phe His Ala Val Val Ala Glu Arg Arg Lys Phe Gly Pro Gln	
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Val Asn Val Leu Tyr Asn Phe Leu Glu Ala Asn Ala Lys Val Pro Tyr	
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Ile Arg Pro Glu Met Leu Glu Gly Glu Leu Ser Leu Ala Pro Gly Phe	
1795 1800 1805	

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ggc tta aag ggg gag ctg act atg acc agc cac atg gag aac tta cag Gly Leu Lys Gly Glu Leu Thr Met Thr Ser His Met Glu Asn Leu Gln 1940 1945 1950	6035
aat gcc ctg tac ttc gat atg gtg cca gag tcc tgg gct aga cga gcc Asn Ala Leu Tyr Phe Asp Met Val Pro Glu Ser Trp Ala Arg Arg Ala 1955 1960 1965	6083
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cct cct cgg gaa ggg gcc tac atc cat ggc ctc ttc atg gaa ggt gcc Pro Pro Arg Glu Gly Ala Tyr Ile His Gly Leu Phe Met Glu Gly Ala 2050 2055 2060	6371

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Cys Trp Asp Thr Gln Ala Gly Ile Ile Thr Glu Ala Lys Leu Lys Asp	
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Leu Thr Pro Pro Met Pro Val Met Phe Ile Lys Ala Ile Pro Ala Asp	
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Lys Gln Asp Cys Arg Ser Val Tyr Ser Cys Pro Val Tyr Lys Thr Ser	
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Gln Arg Gly Pro Thr Tyr Val Trp Thr Phe Asn Leu Lys Thr Lys Glu	
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Asn Pro Ser Lys Trp Val Leu Ala Gly Val Ala Leu Leu Leu Gln Ile	
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ac	7093

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ccgcagtccg cccagaccgt aaagggggac gctgaggagc cgcggacgct ctccccggtg	180
ccgccgccgc tgccgccgcc atggctgcca tgatggatcg gaagtgagca ttaggggtaa	240
cggctgccgg cgccggctct tcaagtcccg gctccccggc cgcctccacc cggggaagcg	300
cagcgcggcg cagctgactg ctgcctctca cggccctcgc gaccacaagc cctcaggtcc	360

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 Met Ala Asp Leu Ala Glu Cys Asn Ile Lys Val Met Cys Arg
 1 5 10
 ttc aga cct ctc aac gag tct gaa gtg aac cgc ggc gac aag tac atc 517
 Phe Arg Pro Leu Asn Glu Ser Glu Val Asn Arg Gly Asp Lys Tyr Ile
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 gcc aag ttt cag gga gaa gac acg gtc gtg atc gcg tcc aag cct tat 565
 Ala Lys Phe Gln Gly Glu Asp Thr Val Val Ile Ala Ser Lys Pro Tyr
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 gca ttt gat cgg gtg ttc cag tca agc aca tct caa gag caa gtg tat 613
 Ala Phe Asp Arg Val Phe Gln Ser Ser Thr Ser Gln Glu Gln Val Tyr
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 aat gac tgt gca aag aag att gtt aaa gat gta ctt gaa gga tat aat 661
 Asn Asp Cys Ala Lys Lys Ile Val Lys Asp Val Leu Glu Gly Tyr Asn
 65 70 75
 gga aca ata ttt gca tat gga caa aca tcc tct ggg aag aca cac aca 709
 Gly Thr Ile Phe Ala Tyr Gly Gln Thr Ser Ser Gly Lys Thr His Thr
 80 85 90
 atg gag ggt aaa ctt cat gat cca gaa ggc atg gga att att cca aga 757
 Met Glu Gly Lys Leu His Asp Pro Glu Gly Met Gly Ile Ile Pro Arg
 95 100 105 110
 ata gtg caa gat att ttt aat tat att tac tcc atg gat gaa aat ttg 805
 Ile Val Gln Asp Ile Phe Asn Tyr Ile Tyr Ser Met Asp Glu Asn Leu
 115 120 125
 gaa ttt cat att aag gtt tca tat ttt gaa ata tat ttg gat aag ata 853
 Glu Phe His Ile Lys Val Ser Tyr Phe Glu Ile Tyr Leu Asp Lys Ile
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 agg gac ctg tta gat gtt tca aag acc aac ctt tca gtt cat gaa gac 901
 Arg Asp Leu Leu Asp Val Ser Lys Thr Asn Leu Ser Val His Glu Asp
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 aaa aac cga gtt ccc tat gta aag ggg tgc aca gag cgt ttt gta tgt 949
 Lys Asn Arg Val Pro Tyr Val Lys Gly Cys Thr Glu Arg Phe Val Cys
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 agt cca gat gaa gtt atg gat acc ata gat gaa gga aaa tcc aac aga 997
 Ser Pro Asp Glu Val Met Asp Thr Ile Asp Glu Gly Lys Ser Asn Arg
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 His Val Ala Val Thr Asn Met Asn Glu His Ser Ser Arg Ser His Ser
 195 200 205
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 Ile Phe Leu Ile Asn Val Lys Gln Glu Asn Thr Gln Thr Glu Gln Lys
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 ctg agt gga aaa ctt tat ctg gtt gat tta gct ggt agt gaa aag gtt 1141
 Leu Ser Gly Lys Leu Tyr Leu Val Asp Leu Ala Gly Ser Glu Lys Val
 225 230 235
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 Ser Lys Thr Gly Ala Glu Gly Ala Val Leu Asp Glu Ala Lys Asn Ile

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Asn Lys Ser Leu Ser Ala Leu Gly Asn Val Ile Ser Ala Leu Ala Glu			
255	260	265	270
ggt agt aca tat gtt cca tat cga gat agt aaa atg aca aga atc ctt			1285
Gly Ser Thr Tyr Val Pro Tyr Arg Asp Ser Lys Met Thr Arg Ile Leu			
	275	280	285
caa gat tca tta ggt ggc aac tgt aga acc act att gta att tgc tgc			1333
Gln Asp Ser Leu Gly Gly Asn Cys Arg Thr Thr Ile Val Ile Cys Cys			
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Ser Pro Ser Ser Tyr Asn Glu Ser Glu Thr Lys Ser Thr Leu Leu Phe			
	305	310	315
ggc caa agg gcc aaa aca att aag aac aca gtt tgt gtc aat gtg gag			1429
Gly Gln Arg Ala Lys Thr Ile Lys Asn Thr Val Cys Val Asn Val Glu			
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Leu Thr Ala Glu Gln Trp Lys Lys Lys Tyr Glu Lys Glu Lys Glu Lys			
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Asn Lys Ile Leu Arg Asn Thr Ile Gln Trp Leu Glu Asn Glu Leu Asn			
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Arg Trp Arg Asn Gly Glu Thr Val Pro Ile Asp Glu Gln Phe Asp Lys			
	370	375	380
gag aaa gcc aac ttg gaa gct ttc aca gtg gat aaa gat att act ctt			1621
Glu Lys Ala Asn Leu Glu Ala Phe Thr Val Asp Lys Asp Ile Thr Leu			
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acc aat gat aaa cca gca acc gca att gga gtt ata gga aat ttt act			1669
Thr Asn Asp Lys Pro Ala Thr Ala Ile Gly Val Ile Gly Asn Phe Thr			
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gat gct gaa aga aga aag tgt gaa gaa gaa att gct aaa tta tac aaa			1717
Asp Ala Glu Arg Arg Lys Cys Glu Glu Glu Ile Ala Lys Leu Tyr Lys			
	415	420	425
cag ctt gat gac aag gat gaa gaa att aac cag caa agt caa ctg gta			1765
Gln Leu Asp Asp Lys Asp Glu Glu Ile Asn Gln Gln Ser Gln Leu Val			
	435	440	445
gag aaa ctg aag acg caa atg ttg gat cag gag gag ctt ttg gca tct			1813
Glu Lys Leu Lys Thr Gln Met Leu Asp Gln Glu Glu Leu Leu Ala Ser			
	450	455	460
acc aga agg gat caa gac aat atg caa gct gag ctg aat cgc ctt caa			1861
Thr Arg Arg Asp Gln Asp Asn Met Gln Ala Glu Leu Asn Arg Leu Gln			
	465	470	475
gca gaa aat gat gcc tct aaa gaa gaa gtg aaa gaa gtt tta cag gcc			1909
Ala Glu Asn Asp Ala Ser Lys Glu Glu Val Lys Glu Val Leu Gln Ala			
	480	485	490
cta gaa gaa ctt gct gtc aat tat gat cag aag tct cag gaa gtt gaa			1957
Leu Glu Glu Leu Ala Val Asn Tyr Asp Gln Lys Ser Gln Glu Val Glu			

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tcg gca act tta gcg agt ata gat gct gag ctt cag aaa ctt aag gaa Ser Ala Thr Leu Ala Ser Ile Asp Ala Glu Leu Gln Lys Leu Lys Glu 530 535 540				2053
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aag cag cct gag gga act ggc atg ata gat gaa gag ttc act gtt gca Lys Gln Pro Glu Gly Thr Gly Met Ile Asp Glu Glu Phe Thr Val Ala 575 580 585 590				2197
aga ctc tac att agc aaa atg aag tca gaa gta aaa acc atg gtg aaa Arg Leu Tyr Ile Ser Lys Met Lys Ser Glu Val Lys Thr Met Val Lys 595 600 605				2245
cgt tgc aag cag tta gaa agc aca caa act gag agc aac aaa aaa atg Arg Cys Lys Gln Leu Glu Ser Thr Gln Thr Glu Ser Asn Lys Lys Met 610 615 620				2293
gaa gaa aat gaa aag gag tta gca gca tgt cag ctt cgt atc tct caa Glu Glu Asn Glu Lys Glu Leu Ala Ala Cys Gln Leu Arg Ile Ser Gln 625 630 635				2341
cat gaa gcc aaa atc aag tca ttg act gaa tac ctt caa aat gtg gaa His Glu Ala Lys Ile Lys Ser Leu Thr Glu Tyr Leu Gln Asn Val Glu 640 645 650				2389
caa aag aaa aga cag ttg gag gaa tct gtc gat gcc ctc agt gaa gaa Gln Lys Lys Arg Gln Leu Glu Glu Ser Val Asp Ala Leu Ser Glu Glu 655 660 665 670				2437
cta gtc cag ctt cga gca caa gag aaa gtc cat gaa atg gaa aag gag Leu Val Gln Leu Arg Ala Gln Glu Lys Val His Glu Met Glu Lys Glu 675 680 685				2485
cac tta aat aag gtt cag act gca aat gaa gtt aag caa gct gtt gaa His Leu Asn Lys Val Gln Thr Ala Asn Glu Val Lys Gln Ala Val Glu 690 695 700				2533
cag cag atc cag agc cat aga gaa act cat caa aaa cag atc agt agt Gln Gln Ile Gln Ser His Arg Glu Thr His Gln Lys Gln Ile Ser Ser 705 710 715				2581
ttg aga gat gaa gta gaa gca aaa gca aaa ctt att act gat ctt caa Leu Arg Asp Glu Val Glu Ala Lys Ala Lys Leu Ile Thr Asp Leu Gln 720 725 730				2629
gac caa aac cag aaa atg atg tta gag cag gaa cgt cta aga gta gaa Asp Gln Asn Gln Lys Met Met Leu Glu Gln Glu Arg Leu Arg Val Glu 735 740 745 750				2677
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755	760	765	
gaa ctt acg gtt atg caa gat aga cga gaa caa gca aga caa gac ttg Glu Leu Thr Val Met Gln Asp Arg Arg Glu Gln Ala Arg Gln Asp Leu 770 775 780			2773
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ctg cgc aaa ctc ttt gtt cag gac ctg gct aca aga gtt aaa aag agt Leu Arg Lys Leu Phe Val Gln Asp Leu Ala Thr Arg Val Lys Lys Ser 800 805 810			2869
gct gag att gat tct gat gac acc gga ggc agc gct gct cag aag caa Ala Glu Ile Asp Ser Asp Asp Thr Gly Gly Ser Ala Ala Gln Lys Gln 815 820 825 830			2917
aaa atc tcc ttt ctt gaa aat aat ctt gaa cag ctc act aaa gtg cac Lys Ile Ser Phe Leu Glu Asn Asn Leu Glu Gln Leu Thr Lys Val His 835 840 845			2965
aaa cag ttg gta cgt gat aat gca gat ctc cgc tgt gaa ctt cct aag Lys Gln Leu Val Arg Asp Asn Ala Asp Leu Arg Cys Glu Leu Pro Lys 850 855 860			3013
ttg gaa aag cga ctt cga gct aca gct gag aga gtg aaa gct ttg gaa Leu Glu Lys Arg Leu Arg Ala Thr Ala Glu Arg Val Lys Ala Leu Glu 865 870 875			3061
tca gca ctg aaa gaa gct aaa gaa aat gca tct cgt gat cgc aaa cgc Ser Ala Leu Lys Glu Ala Lys Glu Asn Ala Ser Arg Asp Arg Lys Arg 880 885 890			3109
tat cag caa gaa gta gat cgc ata aag gaa gca gtc agg tca aag aat Tyr Gln Gln Glu Val Asp Arg Ile Lys Glu Ala Val Arg Ser Lys Asn 895 900 905 910			3157
atg gcc aga aga ggg cat tct gca cag att gct aaa cct att cgt ccc Met Ala Arg Arg Gly His Ser Ala Gln Ile Ala Lys Pro Ile Arg Pro 915 920 925			3205
ggg caa cat cca gca gct tct cca act cac cca agt gca att cgt gga Gly Gln His Pro Ala Ala Ser Pro Thr His Pro Ser Ala Ile Arg Gly 930 935 940			3253
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gga ggc aaa caa gtg taa tcgttt atacataccc acaggtgtta aaaagtaatc Gly Gly Lys Gln Val *			3355 960
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<220>

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<400> 559

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Leu Pro Lys Met Pro Trp Ala Met Val Trp Asp Phe Ser Glu Ala Val	
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Cys Arg Gly Cys Val Asn Phe Glu Gly Ala Asp Arg Ile Glu Leu Leu	
35 40 45	
atc gat gcc gcc cgc cag ctc aag cgc agc cac gtg ctc ccc gag ggc	192
Ile Asp Ala Ala Arg Gln Leu Lys Arg Ser His Val Leu Pro Glu Gly	
50 55 60	
cgc tcg ccc ggg ccc ccg gcc ctt aag cac ccg gcc acc aag gac ctg	240
Arg Ser Pro Gly Pro Pro Ala Leu Lys His Pro Ala Thr Lys Asp Leu	
65 70 75 80	
gcg gcg gca gcc gca cag ggg ccc cag ctg ccg ccc ccg cag gcc cag	288
Ala Ala Ala Ala Ala Gln Gly Pro Gln Leu Pro Pro Pro Gln Ala Gln	
85 90 95	
ccc cag ccg tca ggg acc ggc ggc ggc gtg tcg ggc cag gac cgc tat	336
Pro Gln Pro Ser Gly Thr Gly Gly Gly Val Ser Gly Gln Asp Arg Tyr	
100 105 110	
gac agg gcc aca tca tca ggc cgc ctc ccc ctg ccc tcg ccc gcc ctg	384
Asp Arg Ala Thr Ser Ser Gly Arg Leu Pro Leu Pro Ser Pro Ala Leu	
115 120 125	
gag tac act ctg ggg tcc cgc ctg gcc aat ggg ctg ggc cgt gag gag	432
Glu Tyr Thr Leu Gly Ser Arg Leu Ala Asn Gly Leu Gly Arg Glu Glu	
130 135 140	
gcc gtg gct gag ggg gcg cga agg gcc ttg ctt ggc tcc atg cct ggc	480
Ala Val Ala Glu Gly Ala Arg Arg Ala Leu Leu Gly Ser Met Pro Gly	
145 150 155 160	
ttg atg ccc cct ggg ctg ctg gca gct gca gtg tct ggc ctg gga agc	528
Leu Met Pro Pro Gly Leu Leu Ala Ala Ala Val Ser Gly Leu Gly Ser	
165 170 175	
cga ggc ctg acg ctg gca ccc ggc ttg agt cct gcc cgt ccc ctc ttc	576
Arg Gly Leu Thr Leu Ala Pro Gly Leu Ser Pro Ala Arg Pro Leu Phe	
180 185 190	
ggc tcc gat ttc gag aaa gag aag cag cag agg aat gcg gac tgt ctg	624
Gly Ser Asp Phe Glu Lys Glu Lys Gln Gln Arg Asn Ala Asp Cys Leu	
195 200 205	
gca gaa ctg aac gag gcc atg cga ggc cgg gca gag gaa tgg cac ggc	672
Ala Glu Leu Asn Glu Ala Met Arg Gly Arg Ala Glu Glu Trp His Gly	
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Pro	Phe	Asn	Val	Arg	Phe	Lys	Lys	Asp	His	Gly	Leu	Val	Gly	Arg	Val		
				245				250						255			
ttc	gcc	ttc	gat	gct	act	gcc	cgt	cct	cca	gga	tac	gag	ttc	gag	ctg	816	
Phe	Ala	Phe	Asp	Ala	Thr	Ala	Arg	Pro	Pro	Gly	Tyr	Glu	Phe	Glu	Leu		
			260					265					270				
aag	ctc	ttc	acc	gaa	tac	ccc	tgt	ggc	tcc	ggc	aat	gtg	tac	gcc	ggc	864	
Lys	Leu	Phe	Thr	Glu	Tyr	Pro	Cys	Gly	Ser	Gly	Asn	Val	Tyr	Ala	Gly		
		275					280					285					
gtc	ctg	gca	gtg	gct	cgc	cag	atg	ttc	cac	gat	gct	ctg	cgg	gag	ccg	912	
Val	Leu	Ala	Val	Ala	Arg	Gln	Met	Phe	His	Asp	Ala	Leu	Arg	Glu	Pro		
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ggc	aag	gca	ctg	gct	tct	tcg	ggc	ttc	aag	tac	ctc	gaa	tat	gaa	cgc	960	
Gly	Lys	Ala	Leu	Ala	Ser	Ser	Gly	Phe	Lys	Tyr	Leu	Glu	Tyr	Glu	Arg		
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cgg	cat	gga	tca	gga	gaa	tgg	cgg	cag	ctg	ggc	gag	ctg	ctt	acc	gac	1008	
Arg	His	Gly	Ser	Gly	Glu	Trp	Arg	Gln	Leu	Gly	Glu	Leu	Leu	Thr	Asp		
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ggc	gtc	cgc	agc	ttc	cgc	gag	cca	gct	ccc	gcg	gag	gcc	ctg	ccc	cag	1056	
Gly	Val	Arg	Ser	Phe	Arg	Glu	Pro	Ala	Pro	Ala	Glu	Ala	Leu	Pro	Gln		
			340					345					350				
cag	tac	cca	gag	ccg	gcc	cct	gcg	gct	ctc	tgt	ggc	cca	ccc	ccg	cga	1104	
Gln	Tyr	Pro	Glu	Pro	Ala	Pro	Ala	Ala	Leu	Cys	Gly	Pro	Pro	Pro	Arg		
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gcc	cca	tcc	cgg	aac	ctg	gcg	ccc	acg	ccg	cgc	cgt	cgc	aag	gca	tcc	1152	
Ala	Pro	Ser	Arg	Asn	Leu	Ala	Pro	Thr	Pro	Arg	Arg	Arg	Lys	Ala	Ser		
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Pro	Glu	Pro	Glu	Gly	Glu	Ala	Ala	Gly	Lys	Met	Thr	Thr	Glu	Glu	Gln		
385					390					395					400		
cag	caa	cgg	cac	tgg	gtg	gca	ccc	ggc	ggc	ccg	tac	tcc	gct	gag	acc	1248	
Gln	Gln	Arg	His	Trp	Val	Ala	Pro	Gly	Gly	Pro	Tyr	Ser	Ala	Glu	Thr		
			405					410						415			
cct	ggt	gtg	ccc	tcg	ccc	att	gcc	gcc	ctg	aag	aat	gtg	gcc	gaa	gcc	1296	
Pro	Gly	Val	Pro	Ser	Pro	Ile	Ala	Ala	Leu	Lys	Asn	Val	Ala	Glu	Ala		
			420					425					430				
ctg	ggc	cac	tca	ccc	aag	gac	cct	ggc	gga	ggc	ggg	ggg	cct	gtg	cgt	1344	
Leu	Gly	His	Ser	Pro	Lys	Asp	Pro	Gly	Gly	Gly	Gly	Gly	Pro	Val	Arg		
		435					440					445					
gca	ggg	ggc	gcc	agc	cct	gca	gcc	tcc	tcc	acg	gcc	cag	ccg	cca	acc	1392	
Ala	Gly	Gly	Ala	Ser	Pro	Ala	Ala	Ser	Ser	Thr	Ala	Gln	Pro	Pro	Thr		
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cag	cat	cgc	ctt	gtg	gcc	cgc	aac	ggc	gaa	gca	gaa	gtc	agt	ccc	aca	1440	
Gln	His	Arg	Leu	Val	Ala	Arg	Asn	Gly	Glu	Ala	Glu	Val	Ser	Pro	Thr		
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gcg	ggg	gcc	gaa	gct	gtc	agc	ggg	ggt	ggc	agc	ggc	act	ggg	gcg	acc	1488	

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Pro Gly Ala Pro Leu Cys Cys Thr Leu Cys Arg Glu Arg Leu Glu Asp	
500 505 510	
acc cac ttc gtc cag tgc ccc tcg gtg ccc gga cac aag ttc tgc ttt	1584
Thr His Phe Val Gln Cys Pro Ser Val Pro Gly His Lys Phe Cys Phe	
515 520 525	
ccc tgc tcc cgg gag ttc atc aag gcg cag ggc ccg gcc ggg gag gtg	1632
Pro Cys Ser Arg Glu Phe Ile Lys Ala Gln Gly Pro Ala Gly Glu Val	
530 535 540	
tac tgc ccg agc gga gac aag tgc ccg ctg gtc ggc tcc tcc gtg ccc	1680
Tyr Cys Pro Ser Gly Asp Lys Cys Pro Leu Val Gly Ser Ser Val Pro	
545 550 555 560	
tgg gcc ttc atg cag ggc gag atc gcc acc atc ctt gct gga gac atc	1728
Trp Ala Phe Met Gln Gly Glu Ile Ala Thr Ile Leu Ala Gly Asp Ile	
565 570 575	
aaa gtt aag aaa gaa cgg gac ccc tag gctac cactgcctcc aggctactgc	1780
Lys Val Lys Lys Glu Arg Asp Pro *	
580 585	
cctctgcccc tttgccaccc accgctgccg cggataaatt attccctccc cgaccagcc	1840
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agatgcattg tgggtggggg gagaaagctt gtggctcctg tccgaggggg tgtttggggt	1960
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acatcgttca agtgactgtt ccagataatg agaaggaaag attatcaagc attgaaaaga	180
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gcgtggattt ccctgtgaaa gttccctaca ggaagatcac attcaaccct ggctgtgtgg	300

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Met Pro Pro Gly Val Val Phe Lys Ala Pro Gly Tyr Leu	
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gaa atc agt tcc atg agg agg atc ttg gag gca gct gag ttt atc aaa	398
Glu Ile Ser Ser Met Arg Arg Ile Leu Glu Ala Ala Glu Phe Ile Lys	
15 20 25	
ttc aca gtc atc agg ccg ctt cca ggg ctt gag ctc agt aat ggt gag	446
Phe Thr Val Ile Arg Pro Leu Pro Gly Leu Glu Leu Ser Asn Gly Glu	
30 35 40 45	
tat tct aca gtg gga aaa cgc aag ata gac cag gag ggc cgt gtg ttt	494
Tyr Ser Thr Val Gly Lys Arg Lys Ile Asp Gln Glu Gly Arg Val Phe	
50 55 60	
caa gaa aag tgg gag aga gcg tat ttc ttc gtg gaa gta cag aat att	542
Gln Glu Lys Trp Glu Arg Ala Tyr Phe Phe Val Glu Val Gln Asn Ile	
65 70 75	
cca aca tgt ctc ata tgc aaa caa agc atg tct gtg tcc aaa gaa tat	590
Pro Thr Cys Leu Ile Cys Lys Gln Ser Met Ser Val Ser Lys Glu Tyr	
80 85 90	
aac cta aga cgc cac tat caa acc aat cac agc aag cat tat gac cag	638
Asn Leu Arg Arg His Tyr Gln Thr Asn His Ser Lys His Tyr Asp Gln	
95 100 105	
tat atg gaa aga atg cgt gac gag aag ctt cac gag ctg aaa aaa ggg	686
Tyr Met Glu Arg Met Arg Asp Glu Lys Leu His Glu Leu Lys Lys Gly	
110 115 120 125	
ctc agg aag tat ctc tta ggc tcg tca gac acc gag tgt ccc gag caa	734
Leu Arg Lys Tyr Leu Leu Gly Ser Ser Asp Thr Glu Cys Pro Glu Gln	
130 135 140	
aaa caa gtg ttt gca aac cca agt cca acc cag aaa tcc ccc gtg cag	782
Lys Gln Val Phe Ala Asn Pro Ser Pro Thr Gln Lys Ser Pro Val Gln	
145 150 155	
cct gta gag gac cta gct ggg aac tta tgg gag aag tta cgt gaa aaa	830
Pro Val Glu Asp Leu Ala Gly Asn Leu Trp Glu Lys Leu Arg Glu Lys	
160 165 170	
atc agg tct ttt gtg gca tat tct atc gca atc gat gag atc acg gat	878
Ile Arg Ser Phe Val Ala Tyr Ser Ile Ala Ile Asp Glu Ile Thr Asp	
175 180 185	
ata aat aat acc acc cag ttg gcc ata ttc atc cgt ggt gtc gat gag	926
Ile Asn Asn Thr Thr Gln Leu Ala Ile Phe Ile Arg Gly Val Asp Glu	
190 195 200 205	
aat ttc gat gtg tcc gaa gaa ctt ctg gac acg gtg ccc atg acg ggt	974
Asn Phe Asp Val Ser Glu Glu Leu Leu Asp Thr Val Pro Met Thr Gly	
210 215 220	
aca aaa tct ggc aac gag atc ttt tcg cgt gtt gag aag agc ctg aaa	1022
Thr Lys Ser Gly Asn Glu Ile Phe Ser Arg Val Glu Lys Ser Leu Lys	
225 230 235	
aag ttc tgt atc gac tgg tcg aaa tta gta agc gtg gcc tcc act ggc	1070
Lys Phe Cys Ile Asp Trp Ser Lys Leu Val Ser Val Ala Ser Thr Gly	
240 245 250	

acc cca gcg atg gtg gat gcc aat aac ggg ctt gtc aca aaa ctg aag	1118
Thr Pro Ala Met Val Asp Ala Asn Asn Gly Leu Val Thr Lys Leu Lys	
255 260 265	
tcc agg gtg gcg acg ttc tgc aag ggt gcg gaa ctg aag tcc atc tgt	1166
Ser Arg Val Ala Thr Phe Cys Lys Gly Ala Glu Leu Lys Ser Ile Cys	
270 275 280 285	
tgt ata att cat ccg gaa tca ctc tgt gct cag aag ttg aag atg gac	1214
Cys Ile Ile His Pro Glu Ser Leu Cys Ala Gln Lys Leu Lys Met Asp	
290 295 300	
cac gtc atg gac gtg gta gtg aag tcc gtg aac tgg ata tgc tcc cgg	1262
His Val Met Asp Val Val Val Lys Ser Val Asn Trp Ile Cys Ser Arg	
305 310 315	
gga ctg aac cac agc gag ttc aca acc ttg ctc tat gag ctg gac agc	1310
Gly Leu Asn His Ser Glu Phe Thr Thr Leu Leu Tyr Glu Leu Asp Ser	
320 325 330	
cag tat ggt agc ctc ctg tac tac acg gag att aag tgg ctc agt cgc	1358
Gln Tyr Gly Ser Leu Leu Tyr Tyr Thr Glu Ile Lys Trp Leu Ser Arg	
335 340 345	
ggg ctc gtg cta aag aga ttt ttc gaa tcc ttg gaa gaa atc gac tcc	1406
Gly Leu Val Leu Lys Arg Phe Phe Glu Ser Leu Glu Glu Ile Asp Ser	
350 355 360 365	
ttc atg tca tcc aga ggg aaa ccc ctg cct caa ctg agc tcc ata gat	1454
Phe Met Ser Ser Arg Gly Lys Pro Leu Pro Gln Leu Ser Ser Ile Asp	
370 375 380	
tgg atc cga gac ctg gcc ttc ttg gtt gac atg acg atg cat ctg aac	1502
Trp Ile Arg Asp Leu Ala Phe Leu Val Asp Met Thr Met His Leu Asn	
385 390 395	
gct ttg aac atc tct ctc caa gga cac tcc caa atc gtc acg cag atg	1550
Ala Leu Asn Ile Ser Leu Gln Gly His Ser Gln Ile Val Thr Gln Met	
400 405 410	
tat gac ctg atc cgg gcg ttc cta gca aaa ctg tgc ctc tgg gag act	1598
Tyr Asp Leu Ile Arg Ala Phe Leu Ala Lys Leu Cys Leu Trp Glu Thr	
415 420 425	
cat ttg acg agg aat aat ctg gcc cac ttt ccc acc ctg aaa ttg gtt	1646
His Leu Thr Arg Asn Asn Leu Ala His Phe Pro Thr Leu Lys Leu Val	
430 435 440 445	
tcc aga aat gaa agc gat ggc ctg aac tac att ccc aaa atc gcg gaa	1694
Ser Arg Asn Glu Ser Asp Gly Leu Asn Tyr Ile Pro Lys Ile Ala Glu	
450 455 460	
ctc aag acc gaa ttc cag aaa agg ctg tct gat ttc aaa ctc tac gaa	1742
Leu Lys Thr Glu Phe Gln Lys Arg Leu Ser Asp Phe Lys Leu Tyr Glu	
465 470 475	
agc gaa ctg act ctg ttc agc tcc ccg ttc tcc acg aag atc gac agt	1790
Ser Glu Leu Thr Leu Phe Ser Ser Pro Phe Ser Thr Lys Ile Asp Ser	
480 485 490	
gtg cac gag gag ctc cag atg gag gtt atc gac ctg caa tgc aac acg	1838
Val His Glu Glu Leu Gln Met Glu Val Ile Asp Leu Gln Cys Asn Thr	
495 500 505	

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gtc ctg aag acg aaa tac gac aag gtg gga ata cca gaa ttc tac aag      1886
Val Leu Lys Thr Lys Tyr Asp Lys Val Gly Ile Pro Glu Phe Tyr Lys
510                      515                      520                      525

tac ctc tgg ggt agc tac ccg aaa tac aag cac cat tgc gca aag att      1934
Tyr Leu Trp Gly Ser Tyr Pro Lys Tyr Lys His His Cys Ala Lys Ile
                    530                      535                      540

ctt tcc atg ttc ggg agc acc tac atc tgc gaa cag ctg ttc tcc att      1982
Leu Ser Met Phe Gly Ser Thr Tyr Ile Cys Glu Gln Leu Phe Ser Ile
                    545                      550                      555

atg aaa ctg agc aaa aca aaa tac tgc tcc cag tta aag gat tcc cag      2030
Met Lys Leu Ser Lys Thr Lys Tyr Cys Ser Gln Leu Lys Asp Ser Gln
                    560                      565                      570

tgg gat tct gta ctc cac atc gca acg tga t ggagagaaaa ctccctggcag      2081
Trp Asp Ser Val Leu His Ile Ala Thr *
                    575                      580

ggccctatgg tgggaaaggc tggagtcttc tagtcccaag ggattgggag atgacaaaat      2141

gaattttttt tttctttttt gagatggagt cttgctctgt cgcccagggtt ggagtgcagt      2201

ggcgtgatct cggcttactg caacttccag ctccctgggtt cgaacgattc tcctgcctca      2261

gcctcccagag cagctgggac tacaggcatg cgccaccatg ccgggctaata ttttgtatta      2321

gtagagatga ggtttcacca tgttggccag gctgggtctcc aactcctgac ctcaggtgat      2381

ccacctgcct cgacctcaca aagtgctggg attacaggca tgaaccactg tgcccagctg      2441

acaaaatgag ttcttaaaact tttttttttt ttcagttttt tttccacttt gaatcagaaa      2501

tataatctgc agtatcatat ttgtttatat tacattgtat gcctcactat tcattaataaa      2561

tcaagaaagt tttattgtaa aaaaaaaaaa      2591

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<210> 561
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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (12) .. (1097)

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          Met Ala Gly Gly Arg His Arg Arg Val Val Gly Thr Leu
                1                      5                      10

cac ctg ctg ctg ctg gtg gcc gcc ctg ccc tgg gca tcc agg ggg gtc      98
His Leu Leu Leu Leu Val Ala Ala Leu Pro Trp Ala Ser Arg Gly Val
          15                      20                      25

agt ccg agt gcc tca gcc tgg cca gag gag aag aat tac cac cag cca      146
Ser Pro Ser Ala Ser Ala Trp Pro Glu Glu Lys Asn Tyr His Gln Pro
          30                      35                      40                      45

gcc att ttg aat tca tcg gct ctt cgg caa att gca gaa ggc acc agt      194

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Ala	Ile	Leu	Asn	Ser	Ser	Ala	Leu	Arg	Gln	Ile	Ala	Glu	Gly	Thr	Ser		
				50					55					60			
atc	tct	gaa	atg	tgg	caa	aat	gac	tta	cag	cca	ttg	ctg	ata	gag	cga		242
Ile	Ser	Glu	Met	Trp	Gln	Asn	Asp	Leu	Gln	Pro	Leu	Leu	Ile	Glu	Arg		
			65					70					75				
tac	ccg	gga	tcc	cct	gga	agc	tat	gct	gct	cgt	cag	cac	atc	atg	cag		290
Tyr	Pro	Gly	Ser	Pro	Gly	Ser	Tyr	Ala	Ala	Arg	Gln	His	Ile	Met	Gln		
			80					85					90				
cga	att	cag	agg	ctt	cag	gct	gac	tgg	gtc	ttg	gaa	ata	gac	acc	ttc		338
Arg	Ile	Gln	Arg	Leu	Gln	Ala	Asp	Trp	Val	Leu	Glu	Ile	Asp	Thr	Phe		
			95			100					105						
ttg	agt	cag	aca	ccc	tat	ggg	tac	cgg	tct	ttc	tca	aat	atc	atc	agc		386
Leu	Ser	Gln	Thr	Pro	Tyr	Gly	Tyr	Arg	Ser	Phe	Ser	Asn	Ile	Ile	Ser		
110						115				120					125		
acc	ctc	aat	ccc	act	gct	aaa	cga	cat	ttg	gtc	ctc	gcc	tgc	cac	tat		434
Thr	Leu	Asn	Pro	Thr	Ala	Lys	Arg	His	Leu	Val	Leu	Ala	Cys	His	Tyr		
				130					135					140			
gac	tcc	aag	tat	ttt	tcc	cac	tgg	aac	aac	aga	gtg	ttt	gta	gga	gcc		482
Asp	Ser	Lys	Tyr	Phe	Ser	His	Trp	Asn	Asn	Arg	Val	Phe	Val	Gly	Ala		
			145					150					155				
act	gat	tca	gcc	gtg	cca	tgt	gca	atg	atg	ttg	gaa	ctt	gct	cgt	gcc		530
Thr	Asp	Ser	Ala	Val	Pro	Cys	Ala	Met	Met	Leu	Glu	Leu	Ala	Arg	Ala		
			160				165					170					
tta	gac	aag	aaa	ctc	ctt	tcc	tta	aag	act	gtt	tca	gac	tcc	aag	cca		578
Leu	Asp	Lys	Lys	Leu	Leu	Ser	Leu	Lys	Thr	Val	Ser	Asp	Ser	Lys	Pro		
			175			180					185						
gat	ttg	tca	ctc	cag	ctg	atc	ttc	ttt	gat	ggg	gaa	gag	gct	ttt	ctt		626
Asp	Leu	Ser	Leu	Gln	Leu	Ile	Phe	Phe	Asp	Gly	Glu	Glu	Ala	Phe	Leu		
190					195					200					205		
cac	tgg	tct	cct	caa	gat	tct	ctc	tat	ggg	tct	cga	cac	tta	gct	gca		674
His	Trp	Ser	Pro	Gln	Asp	Ser	Leu	Tyr	Gly	Ser	Arg	His	Leu	Ala	Ala		
				210					215					220			
aag	atg	gca	tcg	acc	ccg	cac	cca	cct	gga	gcg	aga	ggc	acc	agc	caa		722
Lys	Met	Ala	Ser	Thr	Pro	His	Pro	Pro	Gly	Ala	Arg	Gly	Thr	Ser	Gln		
				225				230					235				
ctg	cat	ggc	atg	gat	tta	ttg	gtc	tta	ttg	gat	ttg	att	gga	gct	cca		770
Leu	His	Gly	Met	Asp	Leu	Leu	Val	Leu	Leu	Asp	Leu	Ile	Gly	Ala	Pro		
			240				245					250					
aac	cca	acg	ttt	ccc	aat	ttt	ttt	cca	aac	tca	gcc	agg	tgg	ttc	gaa		818
Asn	Pro	Thr	Phe	Pro	Asn	Phe	Phe	Pro	Asn	Ser	Ala	Arg	Trp	Phe	Glu		
			255			260					265						
aga	ctt	caa	gca	att	gaa	cat	gaa	ctt	cat	gaa	ttg	ggg	ttg	ctc	aag		866
Arg	Leu	Gln	Ala	Ile	Glu	His	Glu	Leu	His	Glu	Leu	Gly	Leu	Leu	Lys		
270					275					280					285		
gat	cac	tct	ttg	gag	ggg	cgg	tat	ttc	cag	aat	tac	agt	tat	gga	ggg		914
Asp	His	Ser	Leu	Glu	Gly	Arg	Tyr	Phe	Gln	Asn	Tyr	Ser	Tyr	Gly	Gly		
				290				295						300			
gtg	att	cag	gat	gac	cat	att	cca	ttt	tta	aga	aga	ggg	gtt	cca	gtt		962

Val	Ile	Gln	Asp	Asp	His	Ile	Pro	Phe	Leu	Arg	Arg	Gly	Val	Pro	Val		
			305					310					315				
ctg	cat	ctg	ata	ccg	tct	cct	ttc	cct	gaa	gtc	tgg	cac	acc	atg	gat		1010
Leu	His	Leu	Ile	Pro	Ser	Pro	Phe	Pro	Glu	Val	Trp	His	Thr	Met	Asp		
		320					325					330					
gac	aat	gaa	gaa	aat	ttg	gat	gaa	tca	acc	att	gac	aat	cta	aac	aaa		1058
Asp	Asn	Glu	Glu	Asn	Leu	Asp	Glu	Ser	Thr	Ile	Asp	Asn	Leu	Asn	Lys		
	335					340					345						
atc	cta	caa	gtc	ttt	gtg	ttg	gaa	tat	ctt	cat	ttg	taa	tactctgatt				1107
Ile	Leu	Gln	Val	Phe	Val	Leu	Glu	Tyr	Leu	His	Leu	*					
350					355					360							
tagtttagga	taattgggtc	tagaattgaa	ttcaaaagtc	aaggcatcat	ttaaaataat												1167
ctgatttcag	acaaatgctg	tgtggaaaca	tctatcctat	agatcatcct	attccttatgt												1227
gtctttgggtt	atcagatcaa	ttacagaata	attgtgttgt	gatatttgtgt	cctaaattgc												1287
tcattaattt	ttatttacag	attgaaaaag	aggcacogtg	taaagaaaat	ggcaaaataa												1347
atatctttcc	aaggatcatc	atcacgatag	ctaaacagta	cttaaatagc	ggttggaact												1407
aggtagcctt	tcgaatttta	tgattttttc	atatgtggaa	atctattaca	tgtaatacaa												1467
aacaaacatg	tagtttgaag	gcggtcagat	ttctttgaga	aatctttgta	gagttaattt												1527
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<210> 562
 <211> 1409
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (12) .. (950)

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	Met	Ala	Gly	Gly	Arg	His	Arg	Arg	Val	Val	Gly	Thr	Leu				
	1				5						10						
cac	ctg	ctg	ctg	ctg	gtg	gcc	gcc	ctg	ccc	tgg	gca	tcc	agg	ggg	gtc		98
His	Leu	Leu	Leu	Leu	Val	Ala	Ala	Leu	Pro	Trp	Ala	Ser	Arg	Gly	Val		
	15					20				25							
agt	ccg	agt	gcc	tca	gcc	tgg	cca	gag	gag	aag	cac	atc	atg	cag	cga		146
Ser	Pro	Ser	Ala	Ser	Ala	Trp	Pro	Glu	Glu	Lys	His	Ile	Met	Gln	Arg		
	30				35					40				45			
att	cag	agg	ctt	cag	gct	gac	tgg	gtc	ttg	gaa	ata	gac	acc	ttc	ttg		194
Ile	Gln	Arg	Leu	Gln	Ala	Asp	Trp	Val	Leu	Glu	Ile	Asp	Thr	Phe	Leu		
			50					55						60			
agt	cag	aca	ccc	tat	ggg	tac	cgg	tct	ttc	tca	aat	atc	atc	agc	acc		242
Ser	Gln	Thr	Pro	Tyr	Gly	Tyr	Arg	Ser	Phe	Ser	Asn	Ile	Ile	Ser	Thr		
			65					70						75			

ctc aat ccc act gct aaa cga cat ttg gtc ctc gcc tgc cac tat gac	290
Leu Asn Pro Thr Ala Lys Arg His Leu Val Leu Ala Cys His Tyr Asp	
80 85 90	
tcc aag tat ttt tcc cac tgg aac aac aga gtg ttt gta gga gcc act	338
Ser Lys Tyr Phe Ser His Trp Asn Asn Arg Val Phe Val Gly Ala Thr	
95 100 105	
gat tca gcc gtg cca tgt gca atg atg ttg gaa ctt gct cgt gcc tta	386
Asp Ser Ala Val Pro Cys Ala Met Met Leu Glu Leu Ala Arg Ala Leu	
110 115 120 125	
gac aag aaa ctc ctt tcc tta aag act gtt tca gac tcc aag cca gat	434
Asp Lys Lys Leu Leu Ser Leu Lys Thr Val Ser Asp Ser Lys Pro Asp	
130 135 140	
ttg tca ctc cag ctg atc ttc ttt gat ggt gaa gag gct ttt ctt cac	482
Leu Ser Leu Gln Leu Ile Phe Phe Asp Gly Glu Glu Ala Phe Leu His	
145 150 155	
tgg tct cct caa gat tct ctc tat ggg tct cga cac tta gct gca aag	530
Trp Ser Pro Gln Asp Ser Leu Tyr Gly Ser Arg His Leu Ala Ala Lys	
160 165 170	
atg gca tcg acc ccg cac cca cct gga gcg aga ggc acc agc caa ctg	578
Met Ala Ser Thr Pro His Pro Pro Gly Ala Arg Gly Thr Ser Gln Leu	
175 180 185	
cat ggc atg gat tta ttg gtc tta ttg gat ttg att gga gct cca aac	626
His Gly Met Asp Leu Leu Val Leu Leu Asp Leu Ile Gly Ala Pro Asn	
190 195 200 205	
cca acg ttt ccc aat ttt ttt cca aac tca gcc agg tgg ttc gaa aga	674
Pro Thr Phe Pro Asn Phe Phe Pro Asn Ser Ala Arg Trp Phe Glu Arg	
210 215 220	
ctt caa gca att gaa cat gaa ctt cat gaa ttg ggt ttg ctc aag gat	722
Leu Gln Ala Ile Glu His Glu Leu His Glu Leu Gly Leu Leu Lys Asp	
225 230 235	
cac tct ttg gag ggg cgg tat ttc cag aat tac agt tat gga ggt gtg	770
His Ser Leu Glu Gly Arg Tyr Phe Gln Asn Tyr Ser Tyr Gly Gly Val	
240 245 250	
att cag gat gac cat att cca ttt tta aga aga ggt gtt cca gtt ctg	818
Ile Gln Asp Asp His Ile Pro Phe Leu Arg Arg Gly Val Pro Val Leu	
255 260 265	
cat ctg ata ccg tct cct ttc cct gaa gtc tgg cac acc atg gat gac	866
His Leu Ile Pro Ser Pro Phe Pro Glu Val Trp His Thr Met Asp Asp	
270 275 280 285	
aat gaa gaa aat ttg gat gaa tca acc att gac aat cta aac aaa atc	914
Asn Glu Glu Asn Leu Asp Glu Ser Thr Ile Asp Asn Leu Asn Lys Ile	
290 295 300	
cta caa gtc ttt gtg ttg gaa tat ctt cat ttg taa tact ctgatttagt	964
Leu Gln Val Phe Val Leu Glu Tyr Leu His Leu *	
305 310	
ttaggataat tggttctaga attgaattca aaagtcaagg catcatttaa aataatctga	1024
tttcagacaa atgctgtgtg gaaacatcta tcctatagat catcctattc ttatgtgtct	1084

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ttggttatca gatcaattac agaataattg tgttgtgata ttgtgtccta aattgctcat 1144
taatttttat ttacagattg aaaaagaggg accgtgtaaa gaaaatggca aaataaatat 1204
ctttccaagg atcatcatca cgatagctaa acagtactta aatagcgggt ggaactaggt 1264
agcctttcga attttatgat tttttcatat gtggaaatct attacatgta atacaaaaca 1324
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gaaattaataa tcagaattaa atgct 1409

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<210> 563
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<212> DNA
<213> Homo sapiens

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<222> (124)..(639)

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acc atg tcg agc aaa aga aca aag acc aag acc aag aag cgc cct cag 168
Met Ser Ser Lys Arg Thr Lys Thr Lys Thr Lys Lys Arg Pro Gln
1 5 10 15
cgt gca aca tcc aat gtg ttt gct atg ttt gac cag tca cag att cag 216
Arg Ala Thr Ser Asn Val Phe Ala Met Phe Asp Gln Ser Gln Ile Gln
20 25 30
gag ttc aaa gag gcc ttc aac atg att gat cag aac aga gat ggt ttc 264
Glu Phe Lys Glu Ala Phe Asn Met Ile Asp Gln Asn Arg Asp Gly Phe
35 40 45
atc gac aag gaa gat ttg cat gat atg ctt gct tca ttg ggg aag aat 312
Ile Asp Lys Glu Asp Leu His Asp Met Leu Ala Ser Leu Gly Lys Asn
50 55 60
cca act gat gag tat cta gat gcc atg atg aat gag gct cca ggc ccc 360
Pro Thr Asp Glu Tyr Leu Asp Ala Met Met Asn Glu Ala Pro Gly Pro
65 70 75
atc aat ttc acc atg ttc ctc acc atg ttt ggt gag aag tta aat ggc 408
Ile Asn Phe Thr Met Phe Leu Thr Met Phe Gly Glu Lys Leu Asn Gly
80 85 90 95
aca gat cct gaa gat gtc atc aga aat gcc ttt gct tgc ttt gat gaa 456
Thr Asp Pro Glu Asp Val Ile Arg Asn Ala Phe Ala Cys Phe Asp Glu
100 105 110
gaa gca act ggc acc ata cag gaa gat tac ttg aga gag ctg ctg aca 504
Glu Ala Thr Gly Thr Ile Gln Glu Asp Tyr Leu Arg Glu Leu Leu Thr
115 120 125
acc atg ggg gat cgg ttt aca gat gag gaa gtg gat gag ctg tac aga 552
Thr Met Gly Asp Arg Phe Thr Asp Glu Glu Val Asp Glu Leu Tyr Arg
130 135 140

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gaa gca cct att gat aaa aag ggg aat ttc aat tac atc gag ttc aca 600
 Glu Ala Pro Ile Asp Lys Lys Gly Asn Phe Asn Tyr Ile Glu Phe Thr
 145 150 155
 cgc atc ctg aaa cat gga gcc aaa gac aaa gat gac tga aataacttca 649
 Arg Ile Leu Lys His Gly Ala Lys Asp Lys Asp Asp *
 160 165 170
 aattccagcc aaacgttcct tggtgccaact ttgggtattc tgagattttc tcttgcatgc 709
 ccttagcttt acagcttttg catttctgt tgtatttatt ctcagccatt ttgggcata 769
 gtatctttat aatcagactg gaaacgggac tttctattaa tatcattttc agaataaaaa 829
 atagggtaat ttaacctacc agcccttctc cccaataac tgtggtctat acagagtcaa 889
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 ataaaataaa aaaaaaaaaa 968

<210> 564
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1) .. (5163)

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 ctc tct acc tat cgg ctc cag agc cgc agt cgt cct tcc gcc cca gag 96
 Leu Ser Thr Tyr Arg Leu Gln Ser Arg Ser Arg Pro Ser Ala Pro Glu
 20 25 30
 acc gat gat agt cga gtt ggg ggc att atg aga gga gag aaa aac tac 144
 Thr Asp Asp Ser Arg Val Gly Gly Ile Met Arg Gly Glu Lys Asn Tyr
 35 40 45
 tac ttc cgt gga gct gcg ggg gac cac ggt tcc tgc ccc act aca act 192
 Tyr Phe Arg Gly Ala Ala Gly Asp His Gly Ser Cys Pro Thr Thr Thr
 50 55 60
 tcg cct ctg gcc tcg gcc ctc ttg atg ccc tcg gag gca gtc tca agc 240
 Ser Pro Leu Ala Ser Ala Leu Leu Met Pro Ser Glu Ala Val Ser Ser
 65 70 75 80
 agc tgg tct gag tct gga ggc ggt ttg tca ggg gga gat gaa gag gac 288
 Ser Trp Ser Glu Ser Gly Gly Gly Leu Ser Gly Gly Asp Glu Glu Asp
 85 90 95
 act cgg ctc ctt caa ctc ctc cgc act gcc cgg gat cct tct gag gcc 336
 Thr Arg Leu Leu Gln Leu Leu Arg Thr Ala Arg Asp Pro Ser Glu Ala
 100 105 110
 ttc cag gct ttg caa gct gct ttg ccg cgg cgg ggc ggt cga ctt ggc 384
 Phe Gln Ala Leu Gln Ala Ala Leu Pro Arg Arg Gly Gly Arg Leu Gly

115	120	125	
ttc ccc cga cgc aag gaa gct ttg tat cgg gca ctg ggc cga gtg ctt			432
Phe Pro Arg Arg Lys Glu Ala Leu Tyr Arg Ala Leu Gly Arg Val Leu			
130	135	140	
gtg gaa gga ggt agt gat gag aag cgg ctc tgc ttg caa ctt ctc tcg			480
Val Glu Gly Gly Ser Asp Glu Lys Arg Leu Cys Leu Gln Leu Leu Ser			
145	150	155	160
gac gtt ctc cgg ggt cag ggg gag gca ggc cag ctt gaa gag gcc ttt			528
Asp Val Leu Arg Gly Gln Gly Glu Ala Gly Gln Leu Glu Glu Ala Phe			
165	170	175	
agc tta gca ctt ttg cct caa cta gtt gtc tgc tta cgg gaa gag aat			576
Ser Leu Ala Leu Leu Pro Gln Leu Val Val Ser Leu Arg Glu Glu Asn			
180	185	190	
cca gcc ctg cgg aaa gat gcg ctg cag atc ctt cat ata tgt ctg aaa			624
Pro Ala Leu Arg Lys Asp Ala Leu Gln Ile Leu His Ile Cys Leu Lys			
195	200	205	
cgt agt cct gga gag gtg ctg aga acg ctt ata caa caa gga ctg gaa			672
Arg Ser Pro Gly Glu Val Leu Arg Thr Leu Ile Gln Gln Gly Leu Glu			
210	215	220	
agt acc gat gcc cga ctt aga gct tcc aca gca cta ctg ctt ccc atc			720
Ser Thr Asp Ala Arg Leu Arg Ala Ser Thr Ala Leu Leu Leu Pro Ile			
225	230	235	240
ttg ctt act act gag gac ttg ttg ctt ggt ctg gat ctc acc gag gtg			768
Leu Leu Thr Thr Glu Asp Leu Leu Leu Gly Leu Asp Leu Thr Glu Val			
245	250	255	
ata ata tcc cta gcc cga aag ctt ggt gat cag gag aca gaa gaa gaa			816
Ile Ile Ser Leu Ala Arg Lys Leu Gly Asp Gln Glu Thr Glu Glu Glu			
260	265	270	
tct gag aca gct ttc tcc gca ctt caa caa att ggg gag cga ctt ggc			864
Ser Glu Thr Ala Phe Ser Ala Leu Gln Gln Ile Gly Glu Arg Leu Gly			
275	280	285	
caa gac agg ttt caa tct tac att tct cgt ctg ccc tct gcc ctg agg			912
Gln Asp Arg Phe Gln Ser Tyr Ile Ser Arg Leu Pro Ser Ala Leu Arg			
290	295	300	
aga cac tac aat cgc cgc ctg gag tcc cag ttt gga agt cag gtt cct			960
Arg His Tyr Asn Arg Arg Leu Glu Ser Gln Phe Gly Ser Gln Val Pro			
305	310	315	320
tat tat ttg gaa ctt gaa gcc tct gga ttt cct gaa gat ccc ctt ccc			1008
Tyr Tyr Leu Glu Leu Glu Ala Ser Gly Phe Pro Glu Asp Pro Leu Pro			
325	330	335	
tgt gca gtg act ctt tcc aac agc aat ctt aaa ttt ggg att att cct			1056
Cys Ala Val Thr Leu Ser Asn Ser Asn Leu Lys Phe Gly Ile Ile Pro			
340	345	350	
cag gag ctg cat tca cga tta ttg gat cag gaa gac tat aag aac cgg			1104
Gln Glu Leu His Ser Arg Leu Leu Asp Gln Glu Asp Tyr Lys Asn Arg			
355	360	365	
acc cag gcc gtc gaa gaa cta aag cag gtg ctg gga aaa ttt aac cct			1152
Thr Gln Ala Val Glu Glu Leu Lys Gln Val Leu Gly Lys Phe Asn Pro			

370	375	380	
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Ser Ser Thr Pro His Ser Ser Leu Val Gly Phe Ile Ser Leu Leu Tyr			
385	390	395	400
aat ttg tta gac gat tct aac ttc aaa gtg gtg cat ggc aca ctt gaa			1248
Asn Leu Leu Asp Asp Ser Asn Phe Lys Val Val His Gly Thr Leu Glu			
	405	410	415
gtc ctg cat tta ctg gtt att cgc ctt gga gag cag gta cag cag ttc			1296
Val Leu His Leu Leu Val Ile Arg Leu Gly Glu Gln Val Gln Gln Phe			
	420	425	430
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Leu Gly Pro Val Ile Ala Ala Ser Val Lys Val Leu Ala Asp Asn Lys			
	435	440	445
ttg gtg atc aaa caa gaa tac atg aaa atc ttc ctc aag cta atg aag			1392
Leu Val Ile Lys Gln Glu Tyr Met Lys Ile Phe Leu Lys Leu Met Lys			
	450	455	460
gaa gta gga cct cag cag gtg ctt tgt tta ctc ctg gaa cat ctc aaa			1440
Glu Val Gly Pro Gln Gln Val Leu Cys Leu Leu Leu Glu His Leu Lys			
	465	470	475
cat aag cat tcc aga gtg aga gag gag gtg gtg aac att tgc atc tgc			1488
His Lys His Ser Arg Val Arg Glu Glu Val Val Asn Ile Cys Ile Cys			
	485	490	495
tcc ctg ctg acc tat cct agt gag gat ttt gac ttg ccc aaa ctg tcc			1536
Ser Leu Leu Thr Tyr Pro Ser Glu Asp Phe Asp Leu Pro Lys Leu Ser			
	500	505	510
ttt gat ctt gcc cca gct ctt gta gat agc aaa cgc agg gta cgc caa			1584
Phe Asp Leu Ala Pro Ala Leu Val Asp Ser Lys Arg Arg Val Arg Gln			
	515	520	525
gca gct tta gaa gct ttt gcc gta ttg gca tca tca atg ggc tca ggt			1632
Ala Ala Leu Glu Ala Phe Ala Val Leu Ala Ser Ser Met Gly Ser Gly			
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aaa acc agc atc ctt ttt aaa gct gtg gat aca gtt gaa ctg caa gat			1680
Lys Thr Ser Ile Leu Phe Lys Ala Val Asp Thr Val Glu Leu Gln Asp			
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aat gga gat gga gtg atg aat gct gtg cag gcc aga ttg gct agg aaa			1728
Asn Gly Asp Gly Val Met Asn Ala Val Gln Ala Arg Leu Ala Arg Lys			
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Thr Leu Pro Arg Leu Thr Glu Gln Gly Phe Val Glu Tyr Ala Val Leu			
	580	585	590
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Met Pro Ser Ser Ala Gly Gly Arg Ser Asn His Leu Ala His Gly Ala			
	595	600	605
gat acg gac tgg ctt ttg gct ggt aac aga act cag agt gca cac tgt			1872
Asp Thr Asp Trp Leu Leu Ala Gly Asn Arg Thr Gln Ser Ala His Cys			
	610	615	620
cac tgt ggt gac cac gtg agg gat agc atg cac att tat gga tct tac			1920
His Cys Gly Asp His Val Arg Asp Ser Met His Ile Tyr Gly Ser Tyr			

625	630	635	640	
agc cca act atc tgt acc cga agg gta tta agt gca gga aaa gga aaa				1968
Ser Pro Thr Ile Cys Thr Arg Arg Val Leu Ser Ala Gly Lys Gly Lys	645	650	655	
aat aaa tta cca tgg gaa aat gag caa cct gga atc atg gga gaa aac				2016
Asn Lys Leu Pro Trp Glu Asn Glu Gln Pro Gly Ile Met Gly Glu Asn	660	665	670	
cag acc tcc act tcc aag gat ata gag cag ttt tca aca tat gat ttc				2064
Gln Thr Ser Thr Ser Lys Asp Ile Glu Gln Phe Ser Thr Tyr Asp Phe	675	680	685	
atc cca tct gca aaa tta aag ctt tct caa gga atg cca gtc aat gat				2112
Ile Pro Ser Ala Lys Leu Lys Leu Ser Gln Gly Met Pro Val Asn Asp	690	695	700	
gat tta tgt ttt agc aga aaa aga gta tca aga aac tta ttt cag aat				2160
Asp Leu Cys Phe Ser Arg Lys Arg Val Ser Arg Asn Leu Phe Gln Asn	705	710	715	720
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Ser Arg Asp Phe Asn Pro Asp Cys Leu Pro Leu Cys Ala Ala Gly Thr	725	730	735	
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Thr Gly Thr His Gln Thr Asn Leu Ser Gly Lys Cys Ala Gln Leu Gly	740	745	750	
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Phe Ser Gln Ile Cys Gly Lys Thr Gly Ser Val Gly Ser Asp Leu Gln	755	760	765	
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Phe Leu Gly Thr Thr Ser Ser His Gln Glu Lys Val Tyr Ala Ser Leu	770	775	780	
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Thr Ser Ser Asn Gly Gln Asn Pro Ser Pro Gly Ala Tyr Ile Leu Pro	805	810	815	
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Ser Tyr Pro Val Ser Ser Pro Arg Thr Ser Pro Lys His Thr Ser Pro	820	825	830	
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Leu Ile Ile Ser Pro Lys Lys Ser Gln Asp Asn Ser Val Asn Phe Ser	835	840	845	
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Asn Ser Trp Pro Leu Lys Ser Phe Glu Gly Leu Ser Lys Pro Ser Pro	850	855	860	
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Gln Lys Lys Leu Val Ser Gln Lys Ser Ser Asp Pro Thr Gly Arg Asn	865	870	875	880
cat gga gaa aat tct caa gaa aaa cct cca gtt cag ctt aca cct gcc				2688
His Gly Glu Asn Ser Gln Glu Lys Pro Pro Val Gln Leu Thr Pro Ala				

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Cys	Glu	Lys	Asp	Ser	Leu	Pro	Ile	Asp	Leu	Ser	Glu	Leu	Asn	Phe	Lys	
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Thr	Cys	Ser	Gln	Ser	Val	Ile	Ser	Ser	Val	Glu	Asn	Gly	Asp	Thr	Phe	
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Arg Asn Cys Glu Cys Leu Ser Cys Ile Asp Cys Gly Lys Asp Phe Trp
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ggc gat gac tat aaa aac cac gtg aaa tgc ata agt gaa gat cag aag      674
Gly Asp Asp Tyr Lys Asn His Val Lys Cys Ile Ser Glu Asp Gln Lys
                      45                      50                      55

tat ggt ggc aaa ggc tat gaa ggt aaa acc cac aaa ggc gac atc aaa      722
Tyr Gly Gly Lys Gly Tyr Glu Gly Lys Thr His Lys Gly Asp Ile Lys
                      60                      65                      70

cag cag gcg tgg att cag aaa att agt gaa tta ata aag aga ccc aat      770
Gln Gln Ala Trp Ile Gln Lys Ile Ser Glu Leu Ile Lys Arg Pro Asn
                      75                      80                      85

gtc agc ccc aaa gtg aga gaa ctt tta gag caa att agt gct ttt gac      818
Val Ser Pro Lys Val Arg Glu Leu Leu Glu Gln Ile Ser Ala Phe Asp
                      90                      95                      100                      105

aac gtt ccc agg aaa aag gca aaa ttt cag aat tgg atg aag aac agt      866
Asn Val Pro Arg Lys Lys Ala Lys Phe Gln Asn Trp Met Lys Asn Ser
                      110                      115                      120

tta aaa gtt cat aat gaa tcc att ctg gac cag gtg tgg aat atc ttt      914
Leu Lys Val His Asn Glu Ser Ile Leu Asp Gln Val Trp Asn Ile Phe
                      125                      130                      135

tct gaa gct tcc aac agc gaa cca gtc aat aag gaa cag gat caa cgg      962
Ser Glu Ala Ser Asn Ser Glu Pro Val Asn Lys Glu Gln Asp Gln Arg
                      140                      145                      150

cca ctc cac cca gtg gca aat cca cat gca gaa atc tcc acc aag gtt      1010
Pro Leu His Pro Val Ala Asn Pro His Ala Glu Ile Ser Thr Lys Val
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cca gcc tcc aaa gtg aaa gac gcc gtg gaa cag caa ggg gag gtg aag      1058
Pro Ala Ser Lys Val Lys Asp Ala Val Glu Gln Gln Gly Glu Val Lys
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aag aat aaa aga gaa aga aag gaa gaa cgg cag aag aaa agg aaa aga      1106
Lys Asn Lys Arg Glu Arg Lys Glu Glu Arg Gln Lys Lys Arg Lys Arg
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Glu Lys Lys Glu Leu Lys Leu Glu Asn His Gln Glu Asn Ser Arg Asn	
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Gln Lys Pro Lys Lys Arg Lys Lys Gly Gln Glu Ala Asp Leu Glu Ala	
220 225 230	
ggt ggg gag gaa gtc cct gag gcc aat ggc tct gca ggg aag agg agc	1250
Gly Gly Glu Glu Val Pro Glu Ala Asn Gly Ser Ala Gly Lys Arg Ser	
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aag aag aag aag cag cgc aag gac agc gcc agt gag gaa gag gca cgc	1298
Lys Lys Lys Lys Gln Arg Lys Asp Ser Ala Ser Glu Glu Glu Ala Arg	
250 255 260 265	
gtg ggc gca ggg aag agg aag cgg agg cac tcg gaa gtt gaa aca gat	1346
Val Gly Ala Gly Lys Arg Lys Arg Arg His Ser Glu Val Glu Thr Asp	
270 275 280	
tct aag aag aaa aag atg aag ctc cca gag cat cct gag ggc gga gaa	1394
Ser Lys Lys Lys Lys Met Lys Leu Pro Glu His Pro Glu Gly Gly Glu	
285 290 295	
cca gaa gac gat gag gct cct gca aaa gac ccg tgg cag atg ttg ctg	1442
Pro Glu Asp Asp Glu Ala Pro Ala Lys Asp Pro Trp Gln Met Leu Leu	
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atc aaa tgc agc att tat ttc cct ttg aca gcc agg tgg aag cct caa	1490
Ile Lys Cys Ser Ile Tyr Phe Pro Leu Thr Ala Arg Trp Lys Pro Gln	
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ctcgcctgcac tc atg gct tct cct agc aag gca gtg att gtt ccc ggg	168
Met Ala Ser Pro Ser Lys Ala Val Ile Val Pro Gly	
1 5 10	
aac gga ggc ggg gat gtg acc acc cac ggc tgg tat ggc tgg gtg aaa	216
Asn Gly Gly Gly Asp Val Thr Thr His Gly Trp Tyr Gly Trp Val Lys	
15 20 25	
aag gag ctg gag aag ata cct ggt ttc cag tgt ttg gct aaa aac atg	264

Lys Glu Leu Glu Lys Ile Pro Gly Phe Gln Cys Leu Ala Lys Asn Met
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 Pro Asp Pro Ile Thr Ala Arg Glu Ser Ile Trp Leu Pro Phe Met Glu
 45 50 55 60
 aca gag ctg cac tgt gat gag aag act atc atc att ggc cac agt tct 360
 Thr Glu Leu His Cys Asp Glu Lys Thr Ile Ile Ile Gly His Ser Ser
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 ggg gcc atc gcg gcc atg agg tat gca gaa aca cat cga gta tat gct 408
 Gly Ala Ile Ala Ala Met Arg Tyr Ala Glu Thr His Arg Val Tyr Ala
 80 85 90
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 Ile Val Leu Val Ser Ala Tyr Thr Ser Asp Leu Gly Asp Glu Asn Glu
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 cgt gca agt gga tac ttc acc cgc ccc tgg cag tgg gag aag atc aag 504
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 Met Ser Asp Ser Gly Ala Ser Arg Leu Arg Arg Gln Leu Glu Ser Gly
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Gly	Asp	Arg	Asp	Leu	Gln	Glu	His	Arg	Gln	Arg	Ile	Gln	Ala	Leu	Ala	
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Glu	Glu	Thr	Ala	Gln	Asn	Leu	Lys	Arg	Asn	Val	Tyr	Gln	Asn	Tyr	Arg	
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Gln	Phe	Ile	Glu	Thr	Ala	Arg	Glu	Ile	Ser	Tyr	Leu	Glu	Ser	Glu	Met	
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Tyr	Gln	Leu	Ser	His	Leu	Leu	Thr	Glu	Gln	Lys	Ser	Ser	Leu	Glu	Ser	
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Ile	Pro	Leu	Thr	Leu	Leu	Pro	Ala	Ala	Ala	Ala	Ala	Gly	Ala	Ala	Ala	
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gcc	tct	gga	ggg	gag	gag	gga	gtc	ggt	ggg	gcg	ggg	ggc	cga	gac	cac	497
Ala	Ser	Gly	Gly	Glu	Glu	Gly	Val	Gly	Gly	Ala	Gly	Gly	Arg	Asp	His	
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Leu	Arg	Gly	Gln	Ala	Gly	Phe	Phe	Ser	Thr	Pro	Gly	Gly	Ala	Ser	Arg	
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Asp	Gly	Ser	Gly	Pro	Gly	Glu	Glu	Gly	Lys	Gln	Arg	Thr	Leu	Thr	Thr	
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Gln	Tyr	Leu	Val	Tyr	Asn	Gly	Asp	Leu	Val	Glu	Tyr	Asp	Ala	Asp	His	
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Met	Ala	Gln	Leu	Gln	Arg	Val	His	Gly	Phe	Leu	Met	Asn	Asp	Cys	Leu	
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Leu	Val	Ala	Thr	Trp	Leu	Pro	Gln	Arg	Arg	Gly	Met	Tyr	Arg	Tyr	Asn	
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Ala	Leu	Tyr	Ser	Leu	Asp	Gly	Leu	Ala	Val	Val	Asn	Val	Lys	Asp	Asn	
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Pro	Pro	Met	Lys	Asp	Met	Phe	Lys	Leu	Leu	Met	Phe	Pro	Glu	Asn	Arg	
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Ile	Phe	Gln	Ala	Glu	Asn	Ala	Lys	Ile	Lys	Arg	Glu	Trp	Leu	Glu	Val	
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ctg	gag	gac	acc	aag	agg	gcc	ctc	agt	gag	aaa	agg	cga	agg	gag	cag	977

Leu	Glu	Asp	Thr	Lys	Arg	Ala	Leu	Ser	Glu	Lys	Arg	Arg	Arg	Glu	Gln	
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Glu	Glu	Ala	Ala	Ala	Pro	Arg	Gly	Pro	Pro	Gln	Val	Thr	Ser	Lys	Ala	
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Thr	Asn	Pro	Phe	Glu	Asp	Asp	Glu	Glu	Glu	Glu	Pro	Ala	Val	Pro	Glu	
	310					315					320					
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Val	Glu	Glu	Glu	Lys	Val	Asp	Leu	Ser	Met	Glu	Trp	Ile	Gln	Glu	Leu	
325					330					335					340	
cct	gaa	gac	ctg	gat	gtc	tgc	att	gcg	cag	aga	gac	ttt	gaa	ggg	gcg	1169
Pro	Glu	Asp	Leu	Asp	Val	Cys	Ile	Ala	Gln	Arg	Asp	Phe	Glu	Gly	Ala	
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Val	Asp	Leu	Leu	Asp	Lys	Leu	Asn	His	Tyr	Leu	Glu	Asp	Lys	Pro	Ser	
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Pro	Pro	Pro	Val	Lys	Glu	Leu	Arg	Ala	Lys	Val	Glu	Glu	Arg	Val	Arg	
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Gln	Leu	Thr	Glu	Val	Leu	Val	Phe	Glu	Leu	Ser	Pro	Asp	Arg	Ser	Leu	
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Arg	Gly	Gly	Pro	Lys	Ala	Thr	Arg	Arg	Ala	Val	Ser	Gln	Leu	Ile	Arg	
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Ala	Ala	Val	His	Thr	Ala	Ile	Arg	Gln	Leu	Arg	Ile	Glu	Gly	Ala	Thr	
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Leu	Leu	Tyr	Ile	His	Lys	Leu	Cys	His	Val	Phe	Phe	Thr	Ser	Leu	Leu	
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Glu	Thr	Ala	Arg	Glu	Phe	Glu	Ile	Asp	Phe	Ala	Gly	Thr	Asp	Ser	Gly	
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tgc	tac	tct	gcc	ttt	gtg	gtc	tgg	gca	aga	tca	gcc	atg	ggc	atg	ttc	1601
Cys	Tyr	Ser	Ala	Phe	Val	Val	Trp	Ala	Arg	Ser	Ala	Met	Gly	Met	Phe	
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gtg	gat	gct	ttt	agc	aag	cag	gtg	ttt	gat	agt	aag	gag	agc	ctc	tct	1649
Val	Asp	Ala	Phe	Ser	Lys	Gln	Val	Phe	Asp	Ser	Lys	Glu	Ser	Leu	Ser	
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Thr	Ala	Ala	Glu	Cys	Val	Lys	Val	Ala	Lys	Glu	His	Cys	Gln	Gln	Leu	
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Gly	Asp	Ile	Gly	Leu	Asp	Leu	Thr	Phe	Ile	Ile	His	Ala	Leu	Leu	Val	
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Lys	Asp	Ile	Gln	Gly	Ala	Leu	His	Ser	Tyr	Lys	Glu	Ile	Ile	Ile	Glu	
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Ala	Thr	Lys	His	Arg	Asn	Ser	Glu	Glu	Met	Trp	Arg	Arg	Met	Asn	Leu	
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Met	Thr	Pro	Glu	Ala	Leu	Gly	Lys	Leu	Lys	Glu	Glu	Met	Lys	Ser	Cys	
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Gly	Val	Ser	Asn	Phe	Glu	Gln	Tyr	Thr	Gly	Asp	Asp	Cys	Trp	Val	Asn	
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cta	agt	tac	aca	gtg	gtt	gct	ttc	acc	aaa	cag	acc	atg	ggc	ttc	ttg	1985
Leu	Ser	Tyr	Thr	Val	Val	Ala	Phe	Thr	Lys	Gln	Thr	Met	Gly	Phe	Leu	
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Glu	Glu	Ala	Leu	Lys	Leu	Tyr	Phe	Pro	Glu	Leu	His	Met	Val	Leu	Leu	
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Glu	Ser	Leu	Val	Glu	Ile	Ile	Leu	Val	Ala	Val	Gln	His	Val	Asp	Tyr	
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Ser	Leu	Arg	Cys	Glu	Gln	Asp	Pro	Glu	Lys	Lys	Ala	Phe	Ile	Arg	Gln	
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Asn	Ala	Ser	Phe	Leu	Tyr	Glu	Thr	Val	Leu	Pro	Val	Val	Glu	Lys	Arg	
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Phe	Glu	Glu	Gly	Val	Gly	Lys	Pro	Ala	Lys	Gln	Leu	Gln	Asp	Leu	Arg	
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Asn	Ala	Ser	Arg	Leu	Ile	Arg	Val	Asn	Pro	Glu	Ser	Thr	Thr	Ser	Val	
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Val	*															
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Gly His Ile Val His Asn Trp Lys Ala Arg Trp Phe Ile Leu Arg Gln
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Pro Lys Gly Arg Ile Leu Leu Asp Gly Cys Thr Ile Thr Cys Pro Cys
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ctg gag tat gaa aac cga ccg ctc ctc att aag ctg aag act caa aca      301
Leu Glu Tyr Glu Asn Arg Pro Leu Leu Ile Lys Leu Lys Thr Gln Thr
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Trp Ala Phe Glu Ile Thr Gly Ala Ile His Ala Gly Gln Pro Gly Lys
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gtc cag cag ctg cac agc ctg aga aac tcc ttc aag ctg ccc ccg cac      445
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atc cgt tca agc ccc aac atg gag cag gga agc acc tat aaa aag acc      541
Ile Arg Ser Ser Pro Asn Met Glu Gln Gly Ser Thr Tyr Lys Lys Thr
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ttc ctc ggc tcc tcc ctg gtg gac tgg ctc atc tcc aac agc ttc acg      589
Phe Leu Gly Ser Ser Leu Val Asp Trp Leu Ile Ser Asn Ser Phe Thr
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Ala Lys Gln Gly His Lys Arg Lys Asn Trp Lys Val Arg Arg Phe Val			
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cta agg aag gat cca gct ttc ctg cat tac tat gac cct tcc aaa gaa			925
Leu Arg Lys Asp Pro Ala Phe Leu His Tyr Tyr Asp Pro Ser Lys Glu			
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gag aac agg cca gtg ggt ggg ttt tct ctt cgt ggt tca ctc gtg tct			973
Glu Asn Arg Pro Val Gly Gly Phe Ser Leu Arg Gly Ser Leu Val Ser			
	290	295	300
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Ala Leu Glu Asp Asn Gly Val Pro Thr Gly Val Lys Gly Asn Val Gln			
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Gly Asn Leu Phe Lys Val Ile Thr Lys Asp Asp Thr His Tyr Tyr Ile			
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Gln Ala Ser Ser Lys Ala Glu Arg Ala Glu Trp Ile Glu Ala Ile Lys			
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Asn Ser Lys His Thr Ser Gln Ser Arg Ala Glu Glu Val Asp Tyr Gly	
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Glu Glu Asn Glu Asp Gly Thr Gln Val Ser Pro Gly Ala His Tyr Cys	
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Ser Pro Thr Gly Ala Gly Cys Pro Arg Pro Cys Ala Asp Thr Pro Gly	
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Pro Gln Pro Gln Pro Met Asp Leu Arg Val Gly Gln Arg Pro Pro Val	
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Leu His His His Leu Phe Leu Ala Gly Leu Gln Gln Gln Arg Ser Val	
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Gly Pro Gln Glu Gln Glu Leu Arg Gln Leu Leu His Lys Asp Lys Ser	
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Lys Arg Ser Ala Val Ala Ser Ser Val Val Lys Gln Lys Leu Ala Glu	
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Val Ile Leu Lys Lys Gln Gln Ala Ala Leu Glu Arg Thr Val His Pro	
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Asn Ser Pro Gly Ile Pro Tyr Arg Thr Leu Glu Pro Leu Glu Thr Glu	
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Leu Pro Ser Asp Pro Pro Glu His Phe Pro Leu Arg Lys Thr Val Ser	
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Glu Pro Asn Leu Lys Leu Arg Tyr Lys Pro Lys Lys Ser Leu Glu Arg	
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agt gcc acc gct ccc cca ccg ccg ggc ccc atg cag ccc cgc ctg gag Ser Ala Thr Ala Pro Pro Pro Pro Gly Pro Met Gln Pro Arg Leu Glu 420 425 430 435	1410
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Gly Gly His Arg Pro Leu Ser Arg Ala Gln Ser Ser Pro Ala Ala Pro	
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Ala Ser Leu Ser Ala Pro Glu Pro Ala Ser Gln Ala Arg Val Leu Ser	
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Tyr Asp Ser Val Met Leu Lys His Gln Cys Ser Cys Gly Asp Asn Ser	
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Arg His Pro Glu His Ala Gly Arg Ile Gln Ser Ile Trp Ser Arg Leu	
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Ala Ser Leu Glu Glu Leu Gln Ser Val His Ser Glu Arg His Val Leu	
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Val Ala Ser Arg Glu Leu Lys Asn Gly Phe Ala Val Val Arg Pro Pro	
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Lys Ile Leu Ile Val Asp Trp Asp Val His His Gly Asn Gly Thr Gln	
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Gln Thr Phe Tyr Gln Asp Pro Ser Val Leu Tyr Ile Ser Leu His Arg	
775 780 785	
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His Asp Asp Gly Asn Phe Phe Pro Gly Ser Gly Ala Val Asp Glu Val	
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Gly Leu Asp Pro Pro Met Gly Asp Pro Glu Tyr Leu Ala Ala Phe Arg	
820 825 830 835	
ata gtc gtg atg ccc atc gcc cga gag ttc tct cca gac cta gtc ctg	2658
Ile Val Val Met Pro Ile Ala Arg Glu Phe Ser Pro Asp Leu Val Leu	
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Val Ser Ala Gly Phe Asp Ala Ala Glu Gly His Pro Ala Pro Leu Gly	
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Gly Tyr His Val Ser Ala Lys Cys Phe Gly Tyr Met Thr Gln Gln Leu	
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ctg ggt aac agg gtg gat ccc ctt tca gaa gaa ggc tgg aaa cag aaa	2898
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Pro Asn Leu Asn Ala Ile Arg Ser Leu Glu Ala Val Ile Arg Val His	
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Trp Val Pro Arg Val Pro Gly Ala Asp Lys Glu Glu Val Glu Ala Val	
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Thr Ala Leu Ala Ser Leu Ser Val Gly Ile Leu Ala Glu Asp Arg Pro	
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Ser Glu Gln Leu Val Glu Glu Glu Glu Pro Met Asn Leu *	
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Glu Pro Val Arg Leu Glu Arg Asp Ile Cys Arg Ala Ile Glu Leu Leu
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gaa aaa cta caa agg agt gga gaa gta cca cca cag aaa ctt cag gct      149
Glu Lys Leu Gln Arg Ser Gly Glu Val Pro Pro Gln Lys Leu Gln Ala
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Tyr Glu His Val Tyr Glu Thr Val Asp Ile Ser Ser Ser Pro Glu Val	
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aga gcg aac gct act gca aag gct act gtt gct gca ttt gct gcc agt	293
Arg Ala Asn Ala Thr Ala Lys Ala Thr Val Ala Ala Phe Ala Ala Ser	
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Glu Gly His Ser His Pro Arg Val Val Glu Leu Pro Lys Thr Glu Glu	
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Gly Leu Gly Phe Asn Ile Met Gly Gly Lys Glu Gln Asn Ser Pro Ile	
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Tyr Ile Ser Arg Ile Ile Pro Gly Gly Ile Ala Asp Arg His Gly Gly	
120 125 130	
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Leu Lys Arg Gly Asp Gln Leu Leu Ser Val Asn Gly Val Ser Val Glu	
135 140 145	
gga gaa cat cat gaa aaa gct gta gaa ctg ctg aaa gcc gca caa gga	533
Gly Glu His His Glu Lys Ala Val Glu Leu Leu Lys Ala Ala Gln Gly	
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1361

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cagagttaaa tt      atg gca gag aca agt ctg tta gag gct ggg gcc tct      348
                      Met Ala Glu Thr Ser Leu Leu Glu Ala Gly Ala Ser
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gca gcc tct aca gct gcg gct ttg gag aac tta cag gtg gag gcg agc      396
Ala Ala Ser Thr Ala Ala Ala Leu Glu Asn Leu Gln Val Glu Ala Ser
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tgc tct gtg tgc ctg gag tat ctg aag gaa cct gtc atc att gag tgt      444
Cys Ser Val Cys Leu Glu Tyr Leu Lys Glu Pro Val Ile Ile Glu Cys
          30          35          40

ggg cac aac ttc tgc aaa gct tgc atc acc cgc tgg tgg gag gac cta      492
Gly His Asn Phe Cys Lys Ala Cys Ile Thr Arg Trp Trp Glu Asp Leu
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Glu Arg Asp Phe Pro Cys Pro Val Cys Arg Lys Thr Ser Arg Tyr Arg
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agt ctc cga cct aat cgg caa cta ggc agt atg gtg gaa att gcc aag      588
Ser Leu Arg Pro Asn Arg Gln Leu Gly Ser Met Val Glu Ile Ala Lys
          80          85          90

cag ctc cag gcc gtc aag cgg aag atc cgg gat gag agc ctc tgc ccc      636
Gln Leu Gln Ala Val Lys Arg Lys Ile Arg Asp Glu Ser Leu Cys Pro
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caa cac cat gag gcc ctc agc ctt ttc tgt tat gag gac cag gag gct      684
Gln His His Glu Ala Leu Ser Leu Phe Cys Tyr Glu Asp Gln Glu Ala
          110          115          120

gta tgc ttg ata tgt gca att tcc cac acc cac cgg gcc cac acc gtt      732
Val Cys Leu Ile Cys Ala Ile Ser His Thr His Arg Ala His Thr Val
          125          130          135          140

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	160	165	170	
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Ser Ser Glu Glu Lys Lys Pro Gly Glu Leu Lys Arg Leu Val Glu Ser				
	175	180	185	
cgc cga cag cag atc ttg agg gag ttt gaa gag ctt cat agg cgg ctg				924
Arg Arg Gln Gln Ile Leu Arg Glu Phe Glu Glu Leu His Arg Arg Leu				
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gat gaa gag cag cag gtg ttg ctt tca cga ctg gaa gaa gag gaa cag				972
Asp Glu Glu Gln Gln Val Leu Leu Ser Arg Leu Glu Glu Glu Glu Gln				
	205	210	215	220
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Asp Ile Leu Gln Arg Leu Arg Glu Asn Ala Ala His Leu Gly Asp Lys				
	225	230	235	
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Arg Arg Asp Leu Ala His Leu Ala Ala Glu Val Glu Gly Lys Cys Leu				
	240	245	250	
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Gln Ser Gly Phe Glu Met Leu Lys Val Arg Pro Leu Pro Leu His Ser				
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Pro Ser Gly *				
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<400> 572

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cttccgcgac  atg ttc acg ctg cgt ggg ctc ggc ggc cca ggc gcc att      169
              Met Phe Thr Leu Arg Gly Leu Gly Gly Pro Gly Ala Ile
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gca tgg atc agc cag gcc ttc gat gac gat tcc gcc ctg ctc aag cac      217
Ala Trp Ile Ser Gln Ala Phe Asp Asp Asp Ser Ala Leu Leu Lys His
    15             20             25

gag ctg gcc tac tgc ctg ggc cag atg cag gat gcc cgc gcc atc ccc      265
Glu Leu Ala Tyr Cys Leu Gly Gln Met Gln Asp Ala Arg Ala Ile Pro
    30             35             40             45

atg ctg gtg gac gtg ctg caa gac acc cgt cag gag ccc atg gtg cgc      313
Met Leu Val Asp Val Leu Gln Asp Thr Arg Gln Glu Pro Met Val Arg
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cat gag gca ggg gag gcc ctg ggg gcc atc ggg gac ccg gaa gtt ctg      361
His Glu Ala Gly Glu Ala Leu Gly Ala Ile Gly Asp Pro Glu Val Leu
                65             70             75

gag atc ctg aag cag tat tcc tcg gac ccc gtc atc gag gtg gcc gag      409
Glu Ile Leu Lys Gln Tyr Ser Ser Asp Pro Val Ile Glu Val Ala Glu
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acc tgc cag ctg gcc gtg cgc agg ctg gag tgg ctg cag cag cac ggc      457
Thr Cys Gln Leu Ala Val Arg Arg Leu Glu Trp Leu Gln Gln His Gly
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ggg gag ccg gcg gcg gga ccc tac ctc tcc gtg gac cct gcc ccg ccg      505
Gly Glu Pro Ala Ala Gly Pro Tyr Leu Ser Val Asp Pro Ala Pro Pro
    110             115             120             125

gct gag gag cgt gac gtg ggg cgc ctg cgg gag gcg ctg ctg gat gag      553
Ala Glu Glu Arg Asp Val Gly Arg Leu Arg Glu Ala Leu Leu Asp Glu
                130             135             140

tcc cgg ccg ctc ttc gag cga tac cgc gcc atg ttc gcc ctg cgc aac      601
Ser Arg Pro Leu Phe Glu Arg Tyr Arg Ala Met Phe Ala Leu Arg Asn
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gcg gga ggc gag gag gcc gcc ctg gcg ctg gcc gag ggt ctg cac tgt      649
Ala Gly Gly Glu Glu Ala Ala Leu Ala Leu Ala Glu Gly Leu His Cys
    160             165             170

ggg agc gcc ctc ttc cgc cac gag gtc ggc tac gtc ctg gga cag ctg      697
Gly Ser Ala Leu Phe Arg His Glu Val Gly Tyr Val Leu Gly Gln Leu
    175             180             185

cag cac gag gcg gcg gtg ccc cag ctg gcg gcc gcc ctg gcc cga tgc      745
Gln His Glu Ala Ala Val Pro Gln Leu Ala Ala Ala Leu Ala Arg Cys
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acc gag aac ccc atg gtg cgg cac gag tgc gcg gag gcc ctg ggc gcc      793

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Thr	Glu	Asn	Pro	Met	Val	Arg	His	Glu	Cys	Ala	Glu	Ala	Leu	Gly	Ala		
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att gcc cgg ccc gcc tgc ctg gcc gcg ctg cag gct cac gcg gac gac																	841
Ile Ala Arg Pro Ala Cys Leu Ala Ala Leu Gln Ala His Ala Asp Asp				225				230					235				
cca gag cgc gtg gtg cgt gag agc tgc gag gtg gct ctg gac atg tat																	889
Pro Glu Arg Val Val Arg Glu Ser Cys Glu Val Ala Leu Asp Met Tyr				240			245					250					
gag cac gag acc ggg cgg gcc ttc cag tac gcg gac ggc ctg gag cag																	937
Glu His Glu Thr Gly Arg Ala Phe Gln Tyr Ala Asp Gly Leu Glu Gln				255			260				265						
ctg cgc ggg gcc ccc tcc tag gg cccaccctc acccgagct cccggaggac																	990
Leu Arg Gly Ala Pro Ser *																	
270							275										
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tgaagctttc tgactcttcc ctgctattta ggaagggtt caaagacctg aatacttagt																	180
agccagtgca gcagggtttc agggctctggc ctggggaggg gaggggaggg ggaggggcagg																	240
ttgcagctca agtggcttta gagatgctga gcctctcctt ctgtcctgcc caggacgcaa																	300

1574.

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cctggctgta acccaggcag tgggaggtct gcagcctggt catggcctcc acagcaggtc 1537
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aaccggggaa tgagggactt ggtctggcgg cagatcacaa tgaggaccta gggcatctgt 180
ctgctgacgc cccctggcct gcagtgacc atg gcc ccc cgc aag agg agc cac 233
Met Ala Pro Arg Lys Arg Ser His
1 5

cat ggc ctg ggc ttc ctg tgc tgc ttc ggg ggc agt gac atc ccc gaa 281
His Gly Leu Gly Phe Leu Cys Cys Phe Gly Gly Ser Asp Ile Pro Glu
10 15 20

atc aac ctc cgg gac aac cac cct ctg cag ttc atg gag ttc tcc agc 329
Ile Asn Leu Arg Asp Asn His Pro Leu Gln Phe Met Glu Phe Ser Ser
25 30 35 40

ccc atc ccg aac gca gag gag ctc aac atc cgc ttt gca gag ctg gtg 377
Pro Ile Pro Asn Ala Glu Glu Leu Asn Ile Arg Phe Ala Glu Leu Val
45 50 55

gat gaa ttg gat ctc act gac aaa aac cga gag gct atg ttt gca ctg 425
Asp Glu Leu Asp Leu Thr Asp Lys Asn Arg Glu Ala Met Phe Ala Leu
60 65 70

ccc cct gag aag aaa tgg cag atc tac tgc agc aag aag aag gag cag 473
Pro Pro Glu Lys Lys Trp Gln Ile Tyr Cys Ser Lys Lys Lys Glu Gln
75 80 85

gag gac ccc aac aag ctg gca acc agc tgg cct gac tat tac atc gac 521
Glu Asp Pro Asn Lys Leu Ala Thr Ser Trp Pro Asp Tyr Tyr Ile Asp
90 95 100

cgc atc aat tcc atg gct gcg atg cag agt ctg tac gcg ttt gat gag 569
Arg Ile Asn Ser Met Ala Ala Met Gln Ser Leu Tyr Ala Phe Asp Glu
105 110 115 120

gag gag acg gag atg agg aac caa gtc gtg gaa gac ctg aag aca gcc 617

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Leu	Arg	Thr	Gln	Pro	Met	Arg	Phe	Val	Thr	Arg	Phe	Ile	Glu	Leu	Glu	
			140					145					150			
ggc	ttg	acc	tgt	ctg	cta	aat	ttc	ctc	cgg	agc	atg	gac	cac	gcc	acc	713
Gly	Leu	Thr	Cys	Leu	Leu	Asn	Phe	Leu	Arg	Ser	Met	Asp	His	Ala	Thr	
		155					160					165				
tgt	gag	agc	cgc	atc	cac	acc	tca	ctc	att	ggc	tgc	atc	aaa	gca	ttg	761
Cys	Glu	Ser	Arg	Ile	His	Thr	Ser	Leu	Ile	Gly	Cys	Ile	Lys	Ala	Leu	
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Met	Asn	Asn	Ser	Gln	Gly	Arg	Ala	His	Val	Leu	Ala	Gln	Pro	Glu	Ala	
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Ile	Ser	Thr	Ile	Ala	Gln	Ser	Leu	Arg	Thr	Glu	Asn	Ser	Lys	Thr	Lys	
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Val	Ala	Val	Leu	Glu	Ile	Leu	Gly	Ala	Val	Cys	Leu	Val	Pro	Gly	Gly	
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cac	aag	aag	gtg	ctg	cag	gcc	atg	ctg	cac	tac	cag	gtg	tat	gca	gca	953
His	Lys	Lys	Val	Leu	Gln	Ala	Met	Leu	His	Tyr	Gln	Val	Tyr	Ala	Ala	
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Gly	Arg	Tyr	Arg	Asp	Glu	Val	Asn	Leu	Lys	Thr	Ala	Ile	Met	Ser	Phe	
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atc	aat	gct	gtc	ctc	aat	gct	gga	gct	gga	gag	gat	aat	ctg	gag	ttc	1097
Ile	Asn	Ala	Val	Leu	Asn	Ala	Gly	Ala	Gly	Glu	Asp	Asn	Leu	Glu	Phe	
			285					290						295		
cgc	cta	cat	cta	cgg	tat	gaa	ttc	ctg	atg	ctg	ggt	ata	cag	cct	gtg	1145
Arg	Leu	His	Leu	Arg	Tyr	Glu	Phe	Leu	Met	Leu	Gly	Ile	Gln	Pro	Val	
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Ile	Asp	Lys	Leu	Arg	Gln	His	Glu	Asn	Ala	Ile	Leu	Asp	Lys	His	Leu	
		315					320					325				
gac	ttc	ttc	gag	atg	gtg	cgg	aat	gag	gat	gac	ctg	gag	cta	gcc	agg	1241
Asp	Phe	Phe	Glu	Met	Val	Arg	Asn	Glu	Asp	Asp	Leu	Glu	Leu	Ala	Arg	
	330					335					340					
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Arg	Phe	Asp	Met	Val	His	Ile	Asp	Thr	Lys	Ser	Ala	Ser	Gln	Met	Phe	
345					350					355					360	
gag	ttg	atc	cac	aag	aag	ctg	aag	tac	acg	gag	gcc	tac	ccc	tgc	ctg	1337
Glu	Leu	Ile	His	Lys	Lys	Leu	Lys	Tyr	Thr	Glu	Ala	Tyr	Pro	Cys	Leu	
			365					370						375		
ctc	tct	gtg	ctg	cac	cac	tgc	ctg	cag	atg	ccc	tac	aaa	cgg	aac	ggt	1385

Leu	Ser	Val	Leu	His	His	Cys	Leu	Gln	Met	Pro	Tyr	Lys	Arg	Asn	Gly	
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Gly	Tyr	Phe	Gln	Gln	Trp	Gln	Leu	Leu	Asp	Arg	Ile	Leu	Gln	Gln	Ile	
		395					400					405				
gtc	ctc	cag	gat	gag	cgg	ggt	gtg	gac	cct	gac	ctg	gct	ccc	ttg	gag	1481
Val	Leu	Gln	Asp	Glu	Arg	Gly	Val	Asp	Pro	Asp	Leu	Ala	Pro	Leu	Glu	
		410				415					420					
aac	ttc	aat	gtc	aag	aac	atc	gtc	aac	atg	ctc	atc	aac	gag	aat	gaa	1529
Asn	Phe	Asn	Val	Lys	Asn	Ile	Val	Asn	Met	Leu	Ile	Asn	Glu	Asn	Glu	
425					430				435						440	
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Val	Lys	Gln	Trp	Arg	Asp	Gln	Ala	Glu	Lys	Phe	Arg	Lys	Glu	His	Met	
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Glu	Leu	Val	Ser	Arg	Leu	Glu	Arg	Lys	Glu	Arg	Glu	Cys	Glu	Thr	Lys	
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Thr	Leu	Glu	Lys	Glu	Glu	Met	Met	Arg	Pro	Leu	Asn	Lys	Met	Lys	Asp	
		475					480					485				
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Lys	Leu	Ala	Arg	Glu	Ser	Gln	Glu	Leu	Arg	Gln	Ala	Arg	Gly	Gln	Val	
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Ala	Glu	Leu	Val	Ala	Gln	Leu	Ser	Glu	Leu	Ser	Thr	Gly	Pro	Val	Ser	
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Ser	Pro	Pro	Pro	Pro	Gly	Gly	Pro	Leu	Thr	Leu	Ser	Ser	Ser	Met	Thr	
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Thr	Asn	Asp	Leu	Pro	Pro	Pro	Pro	Pro	Pro	Leu	Pro	Phe	Ala	Cys	Cys	
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Pro	Pro	Pro	Pro	Pro	Pro	Pro	Leu	Pro	Pro	Gly	Gly	Pro	Pro	Thr	Pro	
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cgg	atc	ctg	gac	cta	gag	gat	ttt	gaa	aaa	atg	ttt	tca	gcc	tac	cag	2153

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Arg	His	Gln	Glu	Leu	Ile	Thr	Asn	Pro	Ser	Gln	Gln	Lys	Glu	Leu	Gly		
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Ser	Thr	Glu	Asp	Ile	Tyr	Leu	Ala	Ser	Arg	Lys	Val	Lys	Glu	Leu	Ser		
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Ile	Glu	Arg	Met	Ala	Arg	Ala	Asp	Arg	Phe	Leu	Tyr	Glu	Met	Ser	Arg		
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Phe	Gln	Glu	Arg	Leu	Ala	Glu	Ala	Lys	Pro	Lys	Val	Glu	Ala	Ile	Leu		
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Leu	Ala	Ser	Arg	Glu	Leu	Val	Arg	Ser	Lys	Arg	Leu	Arg	Gln	Met	Leu		
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ggc	gcc	tac	ggg	ttc	cgg	gtg	gcc	agc	ctc	aac	aag	atc	gct	gac	acc	2729	
Gly	Ala	Tyr	Gly	Phe	Arg	Val	Ala	Ser	Leu	Asn	Lys	Ile	Ala	Asp	Thr		
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aag	tcc	agc	atc	gac	aga	aac	atc	tct	ctg	ctc	cat	tac	ctg	atc	atg	2777	
Lys	Ser	Ser	Ile	Asp	Arg	Asn	Ile	Ser	Leu	Leu	His	Tyr	Leu	Ile	Met		
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atc	ctg	gag	aag	cat	ttt	cct	gat	att	cta	aac	atg	cct	tca	gag	ctg	2825	
Ile	Leu	Glu	Lys	His	Phe	Pro	Asp	Ile	Leu	Asn	Met	Pro	Ser	Glu	Leu		
						860				865					870		
caa	cat	ctt	cca	gaa	gcc	gcc	aaa	gtc	aac	cta	gca	gaa	ctg	gag	aag	2873	
Gln	His	Leu	Pro	Glu	Ala	Ala	Lys	Val	Asn	Leu	Ala	Glu	Leu	Glu	Lys		
						875				880					885		
gag	gtg	ggc	aac	ctc	agg	agg	ggc	ctg	aga	gcg	gtg	gag	gtg	gag	ctg	2921	

Glu Val Gly Asn Leu Arg Arg Gly Leu Arg Ala Val Glu Val Glu Leu	
890 895 900	
gag tat cag agg cgc cag gta cgg gag ccc agt gac aag ttt gtc cct	2969
Glu Tyr Gln Arg Arg Gln Val Arg Glu Pro Ser Asp Lys Phe Val Pro	
905 910 915 920	
gtc atg agc gac ttc atc acg gtg tcc agc ttc agc ttc tcc gag ctg	3017
Val Met Ser Asp Phe Ile Thr Val Ser Ser Phe Ser Phe Ser Glu Leu	
925 930 935	
gag gac cag cta aat gag gcc agg gac aag ttc gcc aag gcc ttg atg	3065
Glu Asp Gln Leu Asn Glu Ala Arg Asp Lys Phe Ala Lys Ala Leu Met	
940 945 950	
cac ttc ggg gag cat gac agc aag atg cag cca gac gaa ttc ttt ggc	3113
His Phe Gly Glu His Asp Ser Lys Met Gln Pro Asp Glu Phe Phe Gly	
955 960 965	
atc ttt gat acc ttc ttg cag gcc ttc tca gag gcc cgg cag gat cta	3161
Ile Phe Asp Thr Phe Leu Gln Ala Phe Ser Glu Ala Arg Gln Asp Leu	
970 975 980	
gag gcc atg agg agg agg aag gag gag gag gag cgg cgg gcg cgc atg	3209
Glu Ala Met Arg Arg Arg Lys Glu Glu Glu Glu Arg Arg Ala Arg Met	
985 990 995- 1000	
gaa gcc atg ctg aag gag cag agg gaa cgt gag cgg tgg cag cgg cag	3257
Glu Ala Met Leu Lys Glu Gln Arg Glu Arg Glu Arg Trp Gln Arg Gln	
1005 1010 1015	
cgg aag gtc ctg gct gca ggc agc tcg ctg gag gag gga gga gag ttc	3305
Arg Lys Val Leu Ala Ala Gly Ser Ser Leu Glu Glu Gly Gly Glu Phe	
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gat gac ctg gtg tcg gcc ctg cgc tct ggg gag gtc ttc gac aag gac	3353
Asp Asp Leu Val Ser Ala Leu Arg Ser Gly Glu Val Phe Asp Lys Asp	
1035 1040 1045	
tta tgc aag ctc aag cgc agc cgc aag cga tca ggg agc cag gcc ctg	3401
Leu Cys Lys Leu Lys Arg Ser Arg Lys Arg Ser Gly Ser Gln Ala Leu	
1050 1055 1060	
gaa gtt acc cgg gag cgg gca ata aac cgg cta aat tat tga cctgggg	3450
Glu Val Thr Arg Glu Arg Ala Ile Asn Arg Leu Asn Tyr *	
1065 1070 1075	
aactagccac acaggaggcc gggagacagg gactggtgag aatggggctg agtggaggag	3510
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aaggggctgg tgcccagtcg ggggtggctga gctggtcctt aataggttgt ttcttggctct 5850
tgctttcttc atgccctccc cactgctcct gccaccttta gataagtttc tctagctaat 5910

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tttgtggcca atgtaaaatt cgtcatcaac ctaacaaaca caaccttctc agcagcattt 5970
ctccctctgtg atggaaataa agtgtttagg gcagtgggag gagaaaattc tccaggtgaa 6030
tggggaaggg tctgttccag cctctcccta ctcccatccc atttccacca actggggaac 6090
tgtgactatc tatctcccc cacttctacc agggatgcct tcacgccaag gctgttctca 6150
ccagctgcct cagatgacaa atgaggctaa tggacataat ctacagtgtc ctttttctact 6210
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acccaaaaaa aaaaaa 6286

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<210> 575
<211> 1167
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (265) .. (1044)

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ggacccttgg accagaacct caatcagctc aggaacaggc ttctggcaga tgagcccggc 120
ggcagtggag cgagagatgc agctgatctt ctaggatcta aagcattttc cacggaggat 180
ggtggagagc caggtgtgga cagctcagtc cctctgtctg tgggtgtcctt tcacctggtc 240
agcttcgggc ctgggaatgt gcac atg acc cag ggg gag aag gag cgg ctg 291
Met Thr Gln Gly Glu Lys Glu Arg Leu
1 5

cgg gtc ctg ctc acc ctt agt ttg ggg ctg ggg cct tca gcc cac act 339
Arg Val Leu Leu Thr Leu Ser Leu Gly Leu Gly Pro Ser Ala His Thr
10 15 20 25

gac ggg gta gga ggg ctg cat tca agt gtc ccc ata gcc ctt ccc ttc 387
Asp Gly Val Gly Gly Leu His Ser Ser Val Pro Ile Ala Leu Pro Phe
30 35 40

cca acc agg atg ctg gca ggt caa ctc gag gcc agg gac ccc aaa gag 435
Pro Thr Arg Met Leu Ala Gly Gln Leu Glu Ala Arg Asp Pro Lys Glu
45 50 55

ggc acc cac cca gag gac ccg tgc cca gga gct ggg gct gtc atg gag 483
Gly Thr His Pro Glu Asp Pro Cys Pro Gly Ala Gly Ala Val Met Glu
60 65 70

aag aca gct gtg gca gcc gag gtt ctc acg gag gac tgc aac act ggg 531
Lys Thr Ala Val Ala Ala Glu Val Leu Thr Glu Asp Cys Asn Thr Gly
75 80 85

gag atg cca cca tta cag cag cag atc atc aga ctc cac caa gag ctt 579
Glu Met Pro Pro Leu Gln Gln Gln Ile Ile Arg Leu His Gln Glu Leu
90 95 100 105

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ggg aga cag aag tct ctg tgg gct gat gtt cat gga aaa ctc cgg agt      627
Gly Arg Gln Lys Ser Leu Trp Ala Asp Val His Gly Lys Leu Arg Ser
                110                      115                      120

cat ata gat gct ttg agg gag cag aac atg gag ctc cga gaa aag ctg      675
His Ile Asp Ala Leu Arg Glu Gln Asn Met Glu Leu Arg Glu Lys Leu
                125                      130                      135

aga gct ctg cag ctg cag cgg tgg aaa gcc agg aag aaa tct gca gcg      723
Arg Ala Leu Gln Leu Gln Arg Trp Lys Ala Arg Lys Lys Ser Ala Ala
                140                      145                      150

tcc cca cac gcg ggg caa gaa tcg cac act ctg gca ttg gaa cct gct      771
Ser Pro His Ala Gly Gln Glu Ser His Thr Leu Ala Leu Glu Pro Ala
                155                      160                      165

ttt gga aaa att tca cct ctg tca gct gat gaa gag aca ata ccc aaa      819
Phe Gly Lys Ile Ser Pro Leu Ser Ala Asp Glu Glu Thr Ile Pro Lys
170                      175                      180                      185

tac gct ggc cac aag aat cag agt gcc act ctc ctg gga caa aga tcg      867
Tyr Ala Gly His Lys Asn Gln Ser Ala Thr Leu Leu Gly Gln Arg Ser
                190                      195                      200

tca tct aac aat tca gct cct cca aag cca atg agt tta aag ata gaa      915
Ser Ser Asn Asn Ser Ala Pro Pro Lys Pro Met Ser Leu Lys Ile Glu
                205                      210                      215

aga att agc tcg tgg aaa aca cca cca cag gaa aat aga gat aaa aat      963
Arg Ile Ser Ser Trp Lys Thr Pro Pro Gln Glu Asn Arg Asp Lys Asn
                220                      225                      230

ctt tcc agg aga cgt caa gac aga aga gca aca cct act gga agg cca      1011
Leu Ser Arg Arg Arg Gln Asp Arg Arg Ala Thr Pro Thr Gly Arg Pro
                235                      240                      245

act ccc tgt gca gag aga cgg ggg ggt gtc tga agatggaa aggtggcctc      1062
Thr Pro Cys Ala Glu Arg Arg Gly Gly Val *
250                      255                      260

ggacacttgt gtcactctac actggcccct tggaaaattc agattcagat aaagttccac      1122

ttaggtctaa taaaagtact caatttggtta ttcaaaaaaa aaaaaa      1167

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<210> 576
 <211> 1646
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (361) .. (1605)

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<400> 576
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atcacctgcc catacacgcc agtcattgt attggcctta ctcttccaag aggccatgga      120
agtataaata ataaagcaag aaaggcagat gcatttggtt ggctcagtgg acttctgaat      180
gtactgtgag tatgagacct tcccttccaa aagatccggt gcttcttgtc tattccacac      240

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gaagcttgct tcagatcgag ggaggatgta gcactgtcca caggtgggtg tatgaaagga 300
 aaattctaga ggatctccaa aatccgggtc tactactcaa caggatattc ttcaaggaaa 360
 atg aac ccc aca cta ggc ctg gcc att ttt ctg gct gtt ctc ctc acg 408
 Met Asn Pro Thr Leu Gly Leu Ala Ile Phe Leu Ala Val Leu Leu Thr
 1 5 10 15
 gtg aaa ggt ctt cta aag ccg agc ttc tca cca agg aat tat aaa gct 456
 Val Lys Gly Leu Leu Lys Pro Ser Phe Ser Pro Arg Asn Tyr Lys Ala
 20 25 30
 ttg agc gag gtc caa gga tgg aag caa agg atg gca gcc aag gag ctt 504
 Leu Ser Glu Val Gln Gly Trp Lys Gln Arg Met Ala Ala Lys Glu Leu
 35 40 45
 gca agg cag aac atg gac tta ggc ttt aag ctg ctc aag aag ctg gcc 552
 Ala Arg Gln Asn Met Asp Leu Gly Phe Lys Leu Leu Lys Lys Leu Ala
 50 55 60
 ttt tac aac cct ggc agg aac atc ttc cta tcc ccc ttg agc atc tct 600
 Phe Tyr Asn Pro Gly Arg Asn Ile Phe Leu Ser Pro Leu Ser Ile Ser
 65 70 75 80
 aca gct ttc tcc atg ctg tgc ctg ggt gcc cag gac agc acc ctg gac 648
 Thr Ala Phe Ser Met Leu Cys Leu Gly Ala Gln Asp Ser Thr Leu Asp
 85 90 95
 gag atc aag cag ggg ttc aac ttc aga aag atg cca gaa aaa gat ctt 696
 Glu Ile Lys Gln Gly Phe Asn Phe Arg Lys Met Pro Glu Lys Asp Leu
 100 105 110
 cat gag ggc ttc cat tac atc atc cac gag ctg acc cag aag acc cag 744
 His Glu Gly Phe His Tyr Ile Ile His Glu Leu Thr Gln Lys Thr Gln
 115 120 125
 gac ctc aaa ctg agc att ggg aac acg ctg ttc att gac cag agg ctg 792
 Asp Leu Lys Leu Ser Ile Gly Asn Thr Leu Phe Ile Asp Gln Arg Leu
 130 135 140
 cag cca cag cgt aag ttt ttg gaa gat gcc aag aac ttt tac agt gcc 840
 Gln Pro Gln Arg Lys Phe Leu Glu Asp Ala Lys Asn Phe Tyr Ser Ala
 145 150 155 160
 gaa acc atc ctt acc aac ttt cag aat ttg gaa atg gct cag aag cag 888
 Glu Thr Ile Leu Thr Asn Phe Gln Asn Leu Glu Met Ala Gln Lys Gln
 165 170 175
 atc aat gac ttt atc agt caa aaa acc cat ggg aaa att aac aac ctg 936
 Ile Asn Asp Phe Ile Ser Gln Lys Thr His Gly Lys Ile Asn Asn Leu
 180 185 190
 atc gag aat ata gac ccc ggc act gtg atg ctt ctt gca aat tat att 984
 Ile Glu Asn Ile Asp Pro Gly Thr Val Met Leu Leu Ala Asn Tyr Ile
 195 200 205
 ttc ttt cga gcc agg tgg aaa cat gag ttt gat cca aat gta act aaa 1032
 Phe Phe Arg Ala Arg Trp Lys His Glu Phe Asp Pro Asn Val Thr Lys
 210 215 220
 gag gaa gat ttc ttt ctg gag aaa aac agt tca gtc aag gtg ccc atg 1080
 Glu Glu Asp Phe Phe Leu Glu Lys Asn Ser Ser Val Lys Val Pro Met
 225 230 235 240

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atg ttc cgt agt ggc ata tac caa gtt ggc tat gac gat aag ctc tct      1128
Met Phe Arg Ser Gly Ile Tyr Gln Val Gly Tyr Asp Asp Lys Leu Ser
                245                      250                      255

tgc acc atc ctg gaa ata ccc tac cag aaa aat atc aca gcc atc ttc      1176
Cys Thr Ile Leu Glu Ile Pro Tyr Gln Lys Asn Ile Thr Ala Ile Phe
                260                      265                      270

atc ctt cct gat gag ggc aag ctg aag cac ttg gag aag gga ttg cag      1224
Ile Leu Pro Asp Glu Gly Lys Leu Lys His Leu Glu Lys Gly Leu Gln
                275                      280                      285

gtg gac act ttc tcc aga tgg aaa aca tta ctg tca cgc agg gtc gta      1272
Val Asp Thr Phe Ser Arg Trp Lys Thr Leu Leu Ser Arg Arg Val Val
                290                      295                      300

gac gtg tct gta ccc aga ctc cac atg acg ggc acc ttc gac ctg aag      1320
Asp Val Ser Val Pro Arg Leu His Met Thr Gly Thr Phe Asp Leu Lys
305                      310                      315                      320

aag act ctc tcc tac ata ggt gtc tcc aaa atc ttt gag gaa cat ggt      1368
Lys Thr Leu Ser Tyr Ile Gly Val Ser Lys Ile Phe Glu Glu His Gly
                325                      330                      335

gat ctc acc aag atc gcc cct cat cgc agc ctg aaa gtg ggc gag gct      1416
Asp Leu Thr Lys Ile Ala Pro His Arg Ser Leu Lys Val Gly Glu Ala
                340                      345                      350

gtg aac aag gct gag ctg aag atg gat gag agg ggt acg gaa ggg gcc      1464
Val Asn Lys Ala Glu Leu Lys Met Asp Glu Arg Gly Thr Glu Gly Ala
                355                      360                      365

gct ggc acc gga gca cag act ctg ccc atg gag aca cca ctc gtc gtc      1512
Ala Gly Thr Gly Ala Gln Thr Leu Pro Met Glu Thr Pro Leu Val Val
                370                      375                      380

aag ata gac aaa ccc tat ctg ctg ctg att tac agc gag aaa ata cct      1560
Lys Ile Asp Lys Pro Tyr Leu Leu Leu Ile Tyr Ser Glu Lys Ile Pro
385                      390                      395                      400

tcc gtg ctc ttc ctg gga aag att gtt aac cct att gga aaa taa agg      1608
Ser Val Leu Phe Leu Gly Lys Ile Val Asn Pro Ile Gly Lys *
                405                      410                      415

agaattcctg cttgccacag accccgaaaa aaaaaaaaaa      1646

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<210> 577
<211> 5995
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (301) .. (5676)

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agtagtcgat catcagagag tggattcact gagtttatac aatatcaagc agaccgaact      120

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gatgatattg acagagaact gagtgagggc cagggggcag ctgccatccc aattggtagc	180
acatcctctg agacagaaac agcatccact gtgggatctg aagaaaccat catccagacc	240
ccttccgtag tcactcaggg gacagcaacc cgaagtagga agacagccca aaagactgca	300
atg cag tgc tgc ttg gag tat gtc caa cag ttt ctt acc aga ctt atc Met Gln Cys Cys Leu Glu Tyr Val Gln Gln Phe Leu Thr Arg Leu Ile 1 5 10 15	348
aac ctc tac atc att cag aat aac tct ttt tct cag tct ttg gct aca Asn Leu Tyr Ile Ile Gln Asn Asn Ser Phe Ser Gln Ser Leu Ala Thr 20 25 30	396
gaa cat caa ggg gat ctt ggt cga gaa caa gga gag act tca aaa tgg Glu His Gln Gly Asp Leu Gly Arg Glu Gln Gly Glu Thr Ser Lys Trp 35 40 45	444
gac aga aat tca caa gga gat gta aaa gag aaa aac ata agt aaa caa Asp Arg Asn Ser Gln Gly Asp Val Lys Glu Lys Asn Ile Ser Lys Gln 50 55 60	492
aaa act tct aaa gaa tac ctg tct gcc ttc ctt gct gcc tgt cag ctc Lys Thr Ser Lys Glu Tyr Leu Ser Ala Phe Leu Ala Ala Cys Gln Leu 65 70 75 80	540
ttc cta gag tgc tca agt ttc cca gtt tac att gct gag ggg aac cat Phe Leu Glu Cys Ser Ser Phe Pro Val Tyr Ile Ala Glu Gly Asn His 85 90 95	588
aca tca gag tta cgt tct gaa aaa ttg gag act gac tgt gag cat gtg Thr Ser Glu Leu Arg Ser Glu Lys Leu Glu Thr Asp Cys Glu His Val 100 105 110	636
cag cct cca cag tgg ctc cag act ctg atg aat gct tgc agc caa gca Gln Pro Pro Gln Trp Leu Gln Thr Leu Met Asn Ala Cys Ser Gln Ala 115 120 125	684
agt gat ttc agt gtt cag agt gtt gct att tca cta gtt atg gac ctg Ser Asp Phe Ser Val Gln Ser Val Ala Ile Ser Leu Val Met Asp Leu 130 135 140	732
gtg gga ctg aca cag tct gtg gcc atg gtc act ggg gaa aac atc aac Val Gly Leu Thr Gln Ser Val Ala Met Val Thr Gly Glu Asn Ile Asn 145 150 155 160	780
agt gta gag cct gca caa ccc tta agt cca aac cag gga aga gta gct Ser Val Glu Pro Ala Gln Pro Leu Ser Pro Asn Gln Gly Arg Val Ala 165 170 175	828
gtg gtt att aga cct ccc ctc act cag ggc aat ctg agg tac ata gct Val Val Ile Arg Pro Pro Leu Thr Gln Gly Asn Leu Arg Tyr Ile Ala 180 185 190	876
gag aag act gaa ttt ttc aag cat gta gct tta aca ttg tgg gac cag Glu Lys Thr Glu Phe Phe Lys His Val Ala Leu Thr Leu Trp Asp Gln 195 200 205	924
ttg gga gat ggg aca cct cag cat cac cag aag agt gtg gaa cta ttt Leu Gly Asp Gly Thr Pro Gln His His Gln Lys Ser Val Glu Leu Phe 210 215 220	972
tat caa tta cat aac tta gtt cct tct tct agc atc tgt gag gat gtt Tyr Gln Leu His Asn Leu Val Pro Ser Ser Ser Ile Cys Glu Asp Val	1020

225	230	235	240	
ata agt cag cag tta acc cat aaa gat aag aaa ata agg atg gaa gca Ile Ser Gln Gln Leu Thr His Lys Asp Lys Lys Ile Arg Met Glu Ala	245	250	255	1068
cat gcc aag ttt gca gtt ctt tgg cat cta acg aga gat ctc cat ata His Ala Lys Phe Ala Val Leu Trp His Leu Thr Arg Asp Leu His Ile	260	265	270	1116
aat aaa tct tca tct ttt gta cgt tct ttt gac agg tca ctg ttc atc Asn Lys Ser Ser Ser Phe Val Arg Ser Phe Asp Arg Ser Leu Phe Ile	275	280	285	1164
atg tta gat agc ctt aac agt ctc gat ggt tct act agc tct gtg gga Met Leu Asp Ser Leu Asn Ser Leu Asp Gly Ser Thr Ser Ser Val Gly	290	295	300	1212
caa gcc tgg ctg aac caa gtc cta caa aga cat gat att gca cga gtt Gln Ala Trp Leu Asn Gln Val Leu Gln Arg His Asp Ile Ala Arg Val	305	310	315	1260
ttg gaa cca ttg cta ttg ctc ctg ctt cat cca aaa act cag agg gtt Leu Glu Pro Leu Leu Leu Leu Leu Leu His Pro Lys Thr Gln Arg Val	325	330	335	1308
tca gta cag cgt gta caa gca gaa cgt tat tgg aat aag tct ccc tgt Ser Val Gln Arg Val Gln Ala Glu Arg Tyr Trp Asn Lys Ser Pro Cys	340	345	350	1356
tat cca gga gag gag agt gac aag cat ttc atg caa aat ttt gcc tgc Tyr Pro Gly Glu Glu Ser Asp Lys His Phe Met Gln Asn Phe Ala Cys	355	360	365	1404
agc aat gtg agc caa gta caa ctc atc aca tca aaa gga aat ggt gaa Ser Asn Val Ser Gln Val Gln Leu Ile Thr Ser Lys Gly Asn Gly Glu	370	375	380	1452
aag cca ctt acc atg gat gaa ata gag aac ttt agt ctc act gtg aat Lys Pro Leu Thr Met Asp Glu Ile Glu Asn Phe Ser Leu Thr Val Asn	385	390	395	1500
cca tta agt gac aga ctt tcc ctc cta agt acc agc agt gag aca att Pro Leu Ser Asp Arg Leu Ser Leu Leu Ser Thr Ser Ser Glu Thr Ile	405	410	415	1548
cca atg gtt gtg tct gat ttt gat ctt cca gac caa cag ata gaa ata Pro Met Val Val Ser Asp Phe Asp Leu Pro Asp Gln Gln Ile Glu Ile	420	425	430	1596
ctt cag agt tct gac tcc gga tgt tca cag tcc tct gct ggg gac aac Leu Gln Ser Ser Asp Ser Gly Cys Ser Gln Ser Ser Ala Gly Asp Asn	435	440	445	1644
ttg agt tac gaa gtt gat cct gaa acc gtg aat gcc caa gag gat tct Leu Ser Tyr Glu Val Asp Pro Glu Thr Val Asn Ala Gln Glu Asp Ser	450	455	460	1692
caa atg ccc aag gaa agc tcc cca gat gat gat gtt caa cag gta gta Gln Met Pro Lys Glu Ser Ser Pro Asp Asp Asp Val Gln Gln Val Val	465	470	475	1740
ttt gac ctg ata tgt aaa gtt gta agt ggc ctc gaa gtg gaa tct gca Phe Asp Leu Ile Cys Lys Val Val Ser Gly Leu Glu Val Glu Ser Ala				1788

485				490				495								
tca	gtt	aca	tct	caa	tta	gaa	att	gaa	gct	atg	ccc	cca	aag	tgc	agt	1836
Ser	Val	Thr	Ser	Gln	Leu	Glu	Ile	Glu	Ala	Met	Pro	Pro	Lys	Cys	Ser	
500				505				510								
gat	ata	gat	cca	gat	gaa	gag	acg	att	aaa	att	gaa	gat	gac	tcc	att	1884
Asp	Ile	Asp	Pro	Asp	Glu	Glu	Thr	Ile	Lys	Ile	Glu	Asp	Asp	Ser	Ile	
515				520				525								
cga	cag	agt	cag	aat	gct	ttg	ctg	agt	aat	gaa	agt	tct	cag	ttt	ctg	1932
Arg	Gln	Ser	Gln	Asn	Ala	Leu	Leu	Ser	Asn	Glu	Ser	Ser	Gln	Phe	Leu	
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Ser	Val	Ser	Ala	Glu	Gly	Gly	His	Glu	Cys	Val	Ala	Asn	Gly	Ile	Ser	
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gac	tct	tct	gtt	gct	tcc	ata	gaa	acc	aaa	tct	aga	caa	agg	agt	cac	2076
Asp	Ser	Ser	Val	Ala	Ser	Ile	Glu	Thr	Lys	Ser	Arg	Gln	Arg	Ser	His	
580				585				590								
agt	agt	att	caa	ttc	agc	ttc	aaa	gaa	aaa	tta	tca	gaa	aaa	gtt	tcg	2124
Ser	Ser	Ile	Gln	Phe	Ser	Phe	Lys	Glu	Lys	Leu	Ser	Glu	Lys	Val	Ser	
595				600				605								
gag	aag	gaa	aca	ata	gtt	aag	gag	tca	ggt	aaa	caa	cca	gga	gca	aaa	2172
Glu	Lys	Glu	Thr	Ile	Val	Lys	Glu	Ser	Gly	Lys	Gln	Pro	Gly	Ala	Lys	
610				615				620								
cct	aaa	gta	aaa	ctt	gcc	aga	aaa	aag	gat	gat	gac	aag	aaa	aaa	tct	2220
Pro	Lys	Val	Lys	Leu	Ala	Arg	Lys	Lys	Asp	Asp	Asp	Lys	Lys	Lys	Ser	
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Ser	Asn	Glu	Lys	Leu	Lys	Gln	Thr	Ser	Val	Phe	Phe	Ser	Asp	Gly	Leu	
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Asp	Leu	Glu	Asn	Trp	Tyr	Ser	Cys	Gly	Glu	Gly	Asp	Ile	Ser	Glu	Ile	
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gag	agt	gac	atg	ggt	tct	cca	gga	tct	cga	aaa	tct	ccc	aat	ttc	aac	2364
Glu	Ser	Asp	Met	Gly	Ser	Pro	Gly	Ser	Arg	Lys	Ser	Pro	Asn	Phe	Asn	
675				680				685								
att	cat	cct	ctc	tat	caa	cat	gtg	ctc	ctg	tat	ctc	cag	ttg	tat	gat	2412
Ile	His	Pro	Leu	Tyr	Gln	His	Val	Leu	Leu	Tyr	Leu	Gln	Leu	Tyr	Asp	
690				695				700								
tca	tcc	agg	act	ttg	tat	gct	ttc	tct	gcc	atc	aaa	gcc	atc	ttg	aaa	2460
Ser	Ser	Arg	Thr	Leu	Tyr	Ala	Phe	Ser	Ala	Ile	Lys	Ala	Ile	Leu	Lys	
705				710				715				720				
act	aac	cct	ata	gct	ttt	gta	aat	gcc	att	tca	act	act	agt	gta	aat	2508
Thr	Asn	Pro	Ile	Ala	Phe	Val	Asn	Ala	Ile	Ser	Thr	Thr	Ser	Val	Asn	
725				730				735								
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Asn	Ala	Tyr	Thr	Pro	Gln	Leu	Ser	Leu	Leu	Gln	Asn	Leu	Leu	Ala	Arg	

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gac tca aat cat aac ttc cgg agt tct atg tac ata gaa att .ctt att Asp Ser Asn His Asn Phe Arg Ser Ser Met Tyr Ile Glu Ile Leu Ile 770 775 780			2652
tct ctc tgc tta tat tac atg cgt agc cat tac cca act cat gtc aag Ser Leu Cys Leu Tyr Tyr Met Arg Ser His Tyr Pro Thr His Val Lys 785 790 795 800			2700
gtt act gca caa gat tta ata ggc aat cga aac atg caa atg atg agc Val Thr Ala Gln Asp Leu Ile Gly Asn Arg Asn Met Gln Met Met Ser 805 810 815			2748
ata gaa att ctg aca cta ctc ttc act gag ctg gca aaa gta ata gaa Ile Glu Ile Leu Thr Leu Leu Phe Thr Glu Leu Ala Lys Val Ile Glu 820 825 830			2796
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tgc aaa gtt cag aaa gtg att ctt cat tgt ttg ctg tca tct atc ttt Cys Lys Val Gln Lys Val Ile Leu His Cys Leu Leu Ser Ser Ile Phe 850 855 860			2892
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gct gtg gaa gaa ggt ttc tca gag gac agc ctt att aat ttc tca gag Ala Val Glu Glu Gly Phe Ser Glu Asp Ser Leu Ile Asn Phe Ser Glu 885 890 895			2988
gat gaa ttt gac aat ggc agc acg ttg cag tca caa ctt ctt aag gtg Asp Glu Phe Asp Asn Gly Ser Thr Leu Gln Ser Gln Leu Leu Lys Val 900 905 910			3036
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atc aca tgt caa ggc atg ttc ctc tgt gca gtg ata cga gct ttg cat Ile Thr Cys Gln Gly Met Phe Leu Cys Ala Val Ile Arg Ala Leu His 965 970 975			3228
cag cac tgt gca tgt aag atg cac cca caa tgg att ggt tta atc aca Gln His Cys Ala Cys Lys Met His Pro Gln Trp Ile Gly Leu Ile Thr 980 985 990			3276
tct act ctg cct tac atg gga aaa gtt ctg cag aga gtg gtt gtt tct Ser Thr Leu Pro Tyr Met Gly Lys Val Leu Gln Arg Val Val Val Ser			3324

995	1000	1005	
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aaa tac gaa aca gga tta tct gat agt agg cct ctg tgg atg gca tca Lys Tyr Glu Thr Gly Leu Ser Asp Ser Arg Pro Leu Trp Met Ala Ser 1025	1030	1035	3420
att att cca cca gat atg att ctt act ctt ttg gaa ggg att aca gcc Ile Ile Pro Pro Asp Met Ile Leu Thr Leu Leu Glu Gly Ile Thr Ala 1045	1050	1055	3468
att atc cat tac tgt ttg ttg gat cca act aca cag tat cac caa ctt Ile Ile His Tyr Cys Leu Leu Asp Pro Thr Thr Gln Tyr His Gln Leu 1060	1065	1070	3516
ttg gtc agt gta gac cag aaa cac ttg ttt gaa gca cgc agt gga atc Leu Val Ser Val Asp Gln Lys His Leu Phe Glu Ala Arg Ser Gly Ile 1075	1080	1085	3564
ctc tca atc ctt cat atg atc atg tcc tct gtg aca ctg ctt tgg agc Leu Ser Ile Leu His Met Ile Met Ser Ser Val Thr Leu Leu Trp Ser 1090	1095	1100	3612
ata ctg cat caa gct gat tct tca gaa aag atg act att gcc gca tcc Ile Leu His Gln Ala Asp Ser Ser Glu Lys Met Thr Ile Ala Ala Ser 1105	1110	1115	3660
gca tct ctt acc act att aat ctt gga gct aca aag aac ttg aga caa Ala Ser Leu Thr Thr Ile Asn Leu Gly Ala Thr Lys Asn Leu Arg Gln 1125	1130	1135	3708
cag att ctt gaa ttg ttg ggc ccc att tca atg aat cat ggt gtt cac Gln Ile Leu Glu Leu Leu Gly Pro Ile Ser Met Asn His Gly Val His 1140	1145	1150	3756
ttt atg gct gcc att gca ttt gtg tgg aat gaa aga aga cag aat aaa Phe Met Ala Ala Ile Ala Phe Val Trp Asn Glu Arg Arg Gln Asn Lys 1155	1160	1165	3804
aca acc acc agg acc aag gtc att cct gca gcc agt gaa gaa cag ctt Thr Thr Thr Arg Thr Lys Val Ile Pro Ala Ala Ser Glu Glu Gln Leu 1170	1175	1180	3852
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tat gct tat att caa aga att cca gtg ccc aat tta gtg gat agc tgg Tyr Ala Tyr Ile Gln Arg Ile Pro Val Pro Asn Leu Val Asp Ser Trp 1235	1240	1245	4044
gcg tca ctg ttg ata ctt ctg aaa gac tct ata caa ctg agt ctt cca Ala Ser Leu Leu Ile Leu Leu Lys Asp Ser Ile Gln Leu Ser Leu Pro 1250			4092

1250	1255	1260	
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Ala Pro Gly Gln Phe Leu Ile Leu Gly Val Leu Asn Glu Phe Ile Met			
1265	1270	1275	1280
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Lys Asn Pro Ser Leu Glu Asn Lys Lys Asp Gln Arg Asp Leu Gln Asp			
	1285	1290	1295
gta act cac aaa ata gtg gat gca att ggt gca att gct ggt tct tct			4236
Val Thr His Lys Ile Val Asp Ala Ile Gly Ala Ile Ala Gly Ser Ser			
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ctg gaa cag aca aca tgg ctg cga cga aat ctt gaa gtt aag cct tct			4284
Leu Glu Gln Thr Thr Trp Leu Arg Arg Asn Leu Glu Val Lys Pro Ser			
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ccc aaa ata atg gta gat gga acc aat ttg gaa tct gat gtt gaa gat			4332
Pro Lys Ile Met Val Asp Gly Thr Asn Leu Glu Ser Asp Val Glu Asp			
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atg tta tca cct gca atg gaa acc gca aac ata act cct tct gta tat			4380
Met Leu Ser Pro Ala Met Glu Thr Ala Asn Ile Thr Pro Ser Val Tyr			
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Ser Val His Ala Leu Thr Leu Leu Ser Glu Val Leu Ala His Leu Leu			
	1365	1370	1375
gat atg gtt ttc tat agt gat gaa aag gag cgg gtt att cct tta ctt			4476
Asp Met Val Phe Tyr Ser Asp Glu Lys Glu Arg Val Ile Pro Leu Leu			
	1380	1385	1390
gta aat att atg cat tat gtt gtg ccc tac ctc aga aat cac agt gca			4524
Val Asn Ile Met His Tyr Val Val Pro Tyr Leu Arg Asn His Ser Ala			
	1395	1400	1405
cat aat gcc cct agt tat cga gct tgt gtc cag ctg ctc agc agt ctt			4572
His Asn Ala Pro Ser Tyr Arg Ala Cys Val Gln Leu Leu Ser Ser Leu			
	1410	1415	1420
agt ggg tat cag tac aca cgg aga gct tgg aaa aaa gaa gct ttt gac			4620
Ser Gly Tyr Gln Tyr Thr Arg Arg Ala Trp Lys Lys Glu Ala Phe Asp			
1425	1430	1435	1440
ctc ttt atg gat ccc agt ttc ttt cag atg gat gcc tct tgt gtt aat			4668
Leu Phe Met Asp Pro Ser Phe Phe Gln Met Asp Ala Ser Cys Val Asn			
	1445	1450	1455
cat tgg aga gca att atg gac aat ctg atg aca cat gat aaa aca aca			4716
His Trp Arg Ala Ile Met Asp Asn Leu Met Thr His Asp Lys Thr Thr			
	1460	1465	1470
ttt aga gat ttg atg act cgt gta gca gtg gct caa agc agt tca ctt			4764
Phe Arg Asp Leu Met Thr Arg Val Ala Val Ala Gln Ser Ser Ser Leu			
	1475	1480	1485
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Asn Leu Phe Ala Asn Arg Asp Val Glu Leu Glu Gln Arg Ala Met Leu			
	1490	1495	1500
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Leu Lys Arg Leu Ala Phe Ala Ile Phe Ser Ser Glu Ile Asp Gln Tyr			

1505	1510	1515	1520	
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Gln Lys Tyr Leu Pro Asp Ile Gln Glu Arg Leu Val Glu Ser Leu Arg				
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Leu Pro Gln Val Pro Thr Leu His Ser Gln Val Phe Leu Phe Phe Arg				
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Thr Met Ile Thr Glu Leu Val Gln Val Phe Leu Leu Met Glu Gln Glu				
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Leu Thr Ala Asp Glu Asp Ile Ser Arg Thr Ser Gly Pro Ser Val Ala				
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Gly Leu Glu Thr Thr Tyr Thr Gly Gly Asn Gly Phe Ser Thr Ser Tyr				
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Asn Ser Gln Arg Trp Leu Asn Leu Tyr Leu Ser Ala Cys Lys Phe Leu				
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Asp Leu Ala Leu Ala Leu Pro Ser Glu Asn Leu Pro Gln Phe Gln Met				
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Tyr Arg Trp Ala Phe Ile Pro Glu Ala Ser Asp Asp Ser Gly Leu Glu				
1650	1655		1660	
gtc aga agg cag ggt ata cat caa cga gaa ttt aaa cct tac gtg gta				5340
Val Arg Arg Gln Gly Ile His Gln Arg Glu Phe Lys Pro Tyr Val Val				
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cga cta gca aaa ctt ctt cgg aaa aga gca aag aaa aat cca gag gaa				5388
Arg Leu Ala Lys Leu Leu Arg Lys Arg Ala Lys Lys Asn Pro Glu Glu				
1685	1690		1695	
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Asp Asn Ser Gly Arg Thr Leu Gly Trp Glu Pro Gly His Leu Leu Leu				
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acc atc tgc acc gtg cgc agt atg gag cag ctc ctg ccg ttc ttc aat				5484
Thr Ile Cys Thr Val Arg Ser Met Glu Gln Leu Leu Pro Phe Phe Asn				
1715	1720		1725	
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Val Leu Ser Gln Val Phe Asn Ser Lys Val Thr Ser Arg Cys Gly Gly				
1730	1735	1740		
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His Ser Gly Ser Pro Ile Leu Tyr Ser Asn Ala Phe Pro Asn Lys Asp				
1745	1750	1755	1760	
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Met	Gln	Cys	Cys	Leu	Glu	Tyr	Val	Gln	Gln	Phe	Leu	Thr	Arg	Leu	Ile	
1				5					10					15		
aac	ctc	tac	atc	att	cag	aat	aac	tct	ttt	tct	cag	tct	ttg	gct	aca	396
Asn	Leu	Tyr	Ile	Ile	Gln	Asn	Asn	Ser	Phe	Ser	Gln	Ser	Leu	Ala	Thr	
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gaa	cat	caa	ggg	gat	ctt	ggt	cga	gaa	caa	gga	gag	act	tca	aaa	tgg	444
Glu	His	Gln	Gly	Asp	Leu	Gly	Arg	Glu	Gln	Gly	Glu	Thr	Ser	Lys	Trp	
		35					40					45				
gac	aga	aat	tca	caa	gga	gat	gta	aaa	gag	aaa	aac	ata	agt	aaa	caa	492
Asp	Arg	Asn	Ser	Gln	Gly	Asp	Val	Lys	Glu	Lys	Asn	Ile	Ser	Lys	Gln	
	50					55					60					
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Lys	Thr	Ser	Lys	Glu	Tyr	Leu	Ser	Ala	Phe	Leu	Ala	Ala	Cys	Gln	Leu	
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ttc	cta	gag	tgc	tca	agt	ttc	cca	gtt	tac	att	gct	gag	ggg	aac	cat	588
Phe	Leu	Glu	Cys	Ser	Ser	Phe	Pro	Val	Tyr	Ile	Ala	Glu	Gly	Asn	His	
				85					90					95		

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Thr Ser Glu Leu Arg Ser Glu Lys Leu Glu Thr Asp Cys Glu His Val	
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Gln Pro Pro Gln Trp Leu Gln Thr Leu Met Asn Ala Cys Ser Gln Ala	
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Ser Asp Phe Ser Val Gln Ser Val Ala Ile Ser Leu Val Met Asp Leu	
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Val Gly Leu Thr Gln Ser Val Ala Met Val Thr Gly Glu Asn Ile Asn	
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Val Val Ile Arg Pro Pro Leu Thr Gln Gly Asn Leu Arg Tyr Ile Ala	
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Glu Lys Thr Glu Phe Phe Lys His Val Ala Leu Thr Leu Trp Asp Gln	
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Leu Gly Asp Gly Thr Pro Gln His His Gln Lys Ser Val Glu Leu Phe	
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Asn Lys Ser Ser Ser Phe Val Arg Ser Phe Asp Arg Ser Leu Phe Ile	
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Gln Ala Trp Leu Asn Gln Val Leu Gln Arg His Asp Ile Ala Arg Val	
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Ser Val Gln Arg Val Gln Ala Glu Arg Tyr Trp Asn Lys Ser Pro Cys	
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Tyr Pro Gly Glu Glu Ser Asp Lys His Phe Met Gln Asn Phe Ala Cys	
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Lys Pro Leu Thr Met Asp Glu Ile Glu Asn Phe Ser Leu Thr Val Asn	
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Pro Leu Ser Asp Arg Leu Ser Leu Leu Ser Thr Ser Ser Glu Thr Ile	
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Pro Met Val Val Ser Asp Phe Asp Leu Pro Asp Gln Gln Ile Glu Ile	
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Leu Ser Tyr Glu Val Asp Pro Glu Thr Val Asn Ala Gln Glu Asp Ser	
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Ser Val Thr Ser Gln Leu Glu Ile Glu Ala Met Pro Pro Lys Cys Ser	
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Asp Ile Asp Pro Asp Glu Glu Thr Ile Lys Ile Glu Asp Asp Ser Ile	
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Asp Ser Ser Val Ala Ser Ile Glu Thr Lys Ser Arg Gln Arg Ser His	
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Ser Ser Ile Gln Phe Ser Phe Lys Glu Lys Leu Ser Glu Lys Val Ser	
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 Phe Ser Glu Ser Ser Leu Thr Ala Glu Glu Val Cys Ile His Ile Ala
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Val Lys Pro Phe Val Pro Arg Phe Ala Gly Leu Asn Val Ala Trp Leu
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Pro Phe Val Gln Glu Pro Pro Val Thr Glu Gln Lys Ile Tyr Thr Glu
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Glu Asp Ala Glu Glu Phe Pro Asn Leu Ala Val Ala Ser Glu Arg Arg	
405 410 415	
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Asp Arg Ile Glu Thr Pro Lys Phe Gln Ser Lys Gln Gln Pro Gln Asp	
420 425 430 435	
aat ttt aaa aat aat gta aag aag agc cag ctt cca gtg cag ttg gac	1461
Asn Phe Lys Asn Asn Val Lys Lys Ser Gln Leu Pro Val Gln Leu Asp	
440 445 450	
ttg ggg ggc atg ctg aca gcc ctg gag aag aag cag cac tct cag cat	1509
Leu Gly Gly Met Leu Thr Ala Leu Glu Lys Lys Gln His Ser Gln His	
455 460 465	
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Ala Lys Gln Ser Ser Lys Pro Val Val Val Ser Val Gly Ala Val Pro	
470 475 480	
gtc ctt tcc aaa gaa tgt gca tca ggg gag aga ggc cgc cgc atg agt	1605
Val Leu Ser Lys Glu Cys Ala Ser Gly Glu Arg Gly Arg Arg Met Ser	
485 490 495	
caa atg aag acc ccg cac aat ccc ttg gac tcc agc gcc cca ctg atg	1653
Gln Met Lys Thr Pro His Asn Pro Leu Asp Ser Ser Ala Pro Leu Met	
500 505 510 515	
aag aaa ggg aag cag agg gag atc ccc aag gcc aag aag cca acc tca	1701
Lys Lys Gly Lys Gln Arg Glu Ile Pro Lys Ala Lys Lys Pro Thr Ser	
520 525 530	
ctg aag aag att att ttg aaa gaa cgg caa gag aga aag cag cgt ctc	1749
Leu Lys Lys Ile Ile Leu Lys Glu Arg Gln Glu Arg Lys Gln Arg Leu	
535 540 545	
caa gaa aat gct gtg agt cca gct ttt acc agt gat gac aca caa gat	1797
Gln Glu Asn Ala Val Ser Pro Ala Phe Thr Ser Asp Asp Thr Gln Asp	
550 555 560	
gga gag agt ggt ggt gat gac cag ttt ccc gag cag gca gag ctg tca	1845
Gly Glu Ser Gly Gly Asp Asp Gln Phe Pro Glu Gln Ala Glu Leu Ser	
565 570 575	

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aag tct gaa gag cca cca ggc aca gag ctc cag agg gac aca gag gcc Lys Ser Glu Glu Pro Pro Gly Thr Glu Leu Gln Arg Asp Thr Glu Ala 600 605 610	1941
tcc cac ctt gct ccc aat cac acc acc ttc cct aag atc cac agc cgc Ser His Leu Ala Pro Asn His Thr Thr Phe Pro Lys Ile His Ser Arg 615 620 625	1989
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tac cag aaa gat cca gtc aag gcc aag act aaa cgt cga ctt gtg ttg Tyr Gln Lys Asp Pro Val Lys Ala Lys Thr Lys Arg Arg Leu Val Leu 660 665 670 675	2133
ggg ttg agg gag gtt ctc aaa cac ctg aag ctc aaa aaa ctg aaa tgt Gly Leu Arg Glu Val Leu Lys His Leu Lys Leu Lys Lys Leu Lys Cys 680 685 690	2181
gtc att att tct ccc aac tgt gag aag ata cag tca aaa ggt ggg ctg Val Ile Ile Ser Pro Asn Cys Glu Lys Ile Gln Ser Lys Gly Gly Leu 695 700 705	2229
gat gac act ttg cac aca att att gat tat gcc tgt gag cag aac att Asp Asp Thr Leu His Thr Ile Ile Asp Tyr Ala Cys Glu Gln Asn Ile 710 715 720	2277
ccc ttt gtg ttt gct ctc aac cgc aaa gct ctg ggg cgc agt ttg aat Pro Phe Val Phe Ala Leu Asn Arg Lys Ala Leu Gly Arg Ser Leu Asn 725 730 735	2325
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cag gat cag ttc cac aag atg gtt gag ctg aca gtg gcg gcc cga cag Gln Asp Gln Phe His Lys Met Val Glu Leu Thr Val Ala Ala Arg Gln 760 765 770	2421
gcg tac aag acc atg ctg gag aat gtg cag cag gag ctg gtg gga gag Ala Tyr Lys Thr Met Leu Glu Asn Val Gln Gln Glu Leu Val Gly Glu 775 780 785	2469
ccc agg cct cag gca cct ccc agc cta ccc aca cag ggc ccc agc tgc Pro Arg Pro Gln Ala Pro Pro Ser Leu Pro Thr Gln Gly Pro Ser Cys 790 795 800	2517
cct gca gaa gat ggc ccc cca gcc ctg aaa gaa aaa gaa gag cca cac Pro Ala Glu Asp Gly Pro Pro Ala Leu Lys Glu Lys Glu Glu Pro His 805 810 815	2565
tac att gaa atc tgg aaa aaa cat ctg gaa gca tac agt gga tgt acc Tyr Ile Glu Ile Trp Lys Lys His Leu Glu Ala Tyr Ser Gly Cys Thr 820 825 830 835	2613

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Val Val Arg Pro Gly Asn Ala Gly Leu Thr Asp Asp Glu Lys Thr Tyr

85

90

95

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Tyr Ser Leu Ile Thr Ser Phe Ser Glu Leu Tyr Leu Pro Ser Ser Thr	
100 105 110 115	
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ttaaagcgcg gctgcgcccc gcttctgacg tccattgaat cgcgcggggc gccggcgggc	180
agcgcggggc tgcgcgggga tcgctgcgcc ctccgccgct ggcctctgcg acgcgcgccg	240
ctcgcgccgag ccacccgccg ccgcgcgggc tccccgcgcc gctgcgctcc tcgccccgcg	300
cctgccccca gg atg gtc cgc gcg agg cac cag ccg ggt ggg ctt tgc	348

Met Val Arg Ala Arg His Gln Pro Gly Gly Leu Cys
 1 5 10

ctc ctg ctg ctg ctg ctc tgc cag ttc atg gag gac cgc agt gcc cag Leu Leu Leu Leu Leu Leu Cys Gln Phe Met Glu Asp Arg Ser Ala Gln 15 20 25	396
gct ggg aac tgc tgg ctc cgt caa gcg aag aac ggc cgc tgc cag gtc Ala Gly Asn Cys Trp Leu Arg Gln Ala Lys Asn Gly Arg Cys Gln Val 30 35 40	444
ctg tac aag acc gaa ctg agc aag gag gag tgc tgc agc acc ggc cgg Leu Tyr Lys Thr Glu Leu Ser Lys Glu Glu Cys Cys Ser Thr Gly Arg 45 50 55 60	492
ctg agc acc tcg tgg acc gag gag gac gtg aat gac aac aca ctc ttc Leu Ser Thr Ser Trp Thr Glu Glu Asp Val Asn Asp Asn Thr Leu Phe 65 70 75	540
aag tgg atg att ttc aac ggg ggc gcc ccc aac tgc atc ccc tgt aaa Lys Trp Met Ile Phe Asn Gly Gly Ala Pro Asn Cys Ile Pro Cys Lys 80 85 90	588
gaa acg tgt gag aac gtg gac tgt gga cct ggg aaa aaa tgc cga atg Glu Thr Cys Glu Asn Val Asp Cys Gly Pro Gly Lys Lys Cys Arg Met 95 100 105	636
aac aag aag aac aaa ccc cgc tgc gtc tgc gcc ccg gat tgt tcc aac Asn Lys Lys Asn Lys Pro Arg Cys Val Cys Ala Pro Asp Cys Ser Asn 110 115 120	684
atc acc tgg aag ggt cca gtc tgc ggg ctg gat ggg aaa acc tac cgc Ile Thr Trp Lys Gly Pro Val Cys Gly Leu Asp Gly Lys Thr Tyr Arg 125 130 135 140	732
aat gaa tgt gca ctc cta aag gca aga tgt aaa gag cag cca gaa ctg Asn Glu Cys Ala Leu Leu Lys Ala Arg Cys Lys Glu Gln Pro Glu Leu 145 150 155	780
gaa gtc cag tac caa ggc aga tgt aaa aag act tgt cgg gat gtt ttc Glu Val Gln Tyr Gln Gly Arg Cys Lys Lys Thr Cys Arg Asp Val Phe 160 165 170	828
tgt cca ggc agc tcc aca tgt gtg gtg gac cag acc aat aat gcc tac Cys Pro Gly Ser Ser Thr Cys Val Val Asp Gln Thr Asn Asn Ala Tyr 175 180 185	876
tgt gtg acc tgt aat cgg att tgc cca gag cct gct tcc tct gag caa Cys Val Thr Cys Asn Arg Ile Cys Pro Glu Pro Ala Ser Ser Glu Gln 190 195 200	924
tat ctc tgt ggg aat gat gga gtc acc tac tcc agt gcc tgc cac ctg Tyr Leu Cys Gly Asn Asp Gly Val Thr Tyr Ser Ser Ala Cys His Leu 205 210 215 220	972
aga aag gct acc tgc ctg ctg ggc aga tct att gga tta gcc tat gag Arg Lys Ala Thr Cys Leu Leu Gly Arg Ser Ile Gly Leu Ala Tyr Glu 225 230 235	1020
gga aag tgt atc aaa gca aag tcc tgt gaa gat atc cag tgc act ggt Gly Lys Cys Ile Lys Ala Lys Ser Cys Glu Asp Ile Gln Cys Thr Gly 240 245 250	1068
ggg aaa aaa tgt tta tgg gat ttc aag gtt ggg aga ggc cgg tgt tcc	1116

Gly Lys Lys Cys Leu Trp Asp Phe Lys Val Gly Arg Gly Arg Cys Ser
 255 260 265

ctc tgt gat gag ctg tgc cct gac agt aag tcg gat gag cct gtc tgt 1164
 Leu Cys Asp Glu Leu Cys Pro Asp Ser Lys Ser Asp Glu Pro Val Cys
 270 275 280

gcc agt gac aat gcc act tat gcc agc gag tgt gcc atg aag gaa gct 1212
 Ala Ser Asp Asn Ala Thr Tyr Ala Ser Glu Cys Ala Met Lys Glu Ala
 285 290 295 300

gcc tgc tcc tca ggt gtg cta ctg gaa gta aag cac tcc gga tct tgc 1260
 Ala Cys Ser Ser Gly Val Leu Leu Glu Val Lys His Ser Gly Ser Cys
 305 310 315

aac tcc att tcg gaa gac acc gag gaa gag gag gaa gat gaa gac cag 1308
 Asn Ser Ile Ser Glu Asp Thr Glu Glu Glu Glu Glu Asp Glu Asp Gln
 320 325 330

gac tac agc ttt cct ata tct tct att cta gag tgg taa actctctata 1357
 Asp Tyr Ser Phe Pro Ile Ser Ser Ile Leu Glu Trp *
 335 340 345

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 ccaattcact gtcaatggaa ttacagctat agcggcagtg tatataggat tgctttttct 180
 cgtcttcctg gggtctgaag taacggaagc taccttgtat aaagacctca acactgctga 240
 cc atg atc agc gca gcc tgg agc atc ttc ctc atc ggg act aaa att 287
 Met Ile Ser Ala Ala Trp Ser Ile Phe Leu Ile Gly Thr Lys Ile
 1 5 10 15

ggg ctg ttc ctt caa gta gca cct cta tca gtt atg gct aaa tcc tgt 335
 Gly Leu Phe Leu Gln Val Ala Pro Leu Ser Val Met Ala Lys Ser Cys
 20 25 30

cca tct gtg tgt cgc tgc gat gcg ggt ttc att tac tgt aat gat cgc 383
 Pro Ser Val Cys Arg Cys Asp Ala Gly Phe Ile Tyr Cys Asn Asp Arg
 35 40 45

ttt ctg aca tcc att cca aca gga ata cca gag gat gct aca act ctc 431
 Phe Leu Thr Ser Ile Pro Thr Gly Ile Pro Glu Asp Ala Thr Thr Leu
 50 55 60

tac ctt cag aac aac caa ata aat aat gct ggg att cct tca gat ttg 479
 Tyr Leu Gln Asn Asn Gln Ile Asn Asn Ala Gly Ile Pro Ser Asp Leu

65	70	75	
aaa aac ttg ctg aaa gta gaa aga ata tac cta tac cac aac agt tta			527
Lys Asn Leu Leu Lys Val Glu Arg Ile Tyr Leu Tyr His Asn Ser Leu			
80	85	90	95
gat gaa ttt cct acc aac ctc cca aag tat gta aaa gag tta cat ttg			575
Asp Glu Phe Pro Thr Asn Leu Pro Lys Tyr Val Lys Glu Leu His Leu			
	100	105	110
caa gaa aat aac ata agg act atc act tat gat tca ctt tca aaa att			623
Gln Glu Asn Asn Ile Arg Thr Ile Thr Tyr Asp Ser Leu Ser Lys Ile			
	115	120	125
ccc tat ctg gaa gaa tta cat tta gat gac aac tct gtc tct gca gtt			671
Pro Tyr Leu Glu Glu Leu His Leu Asp Asp Asn Ser Val Ser Ala Val			
	130	135	140
agc ata gaa gag gga gca ttc cga gac agc aac tat ctc cga ctg ctt			719
Ser Ile Glu Glu Gly Ala Phe Arg Asp Ser Asn Tyr Leu Arg Leu Leu			
	145	150	155
ttc ctg tcc cgt aat cac ctt agc aca att ccc tgg ggt ttg ccc agg			767
Phe Leu Ser Arg Asn His Leu Ser Thr Ile Pro Trp Gly Leu Pro Arg			
160	165	170	175
act ata gaa gaa cta cgc ttg gat gat aat cgc ata tcc act att tca			815
Thr Ile Glu Glu Leu Arg Leu Asp Asp Asn Arg Ile Ser Thr Ile Ser			
	180	185	190
tca cca tct ctt caa ggt ctc act agt cta aaa cgc ctg gtt cta gat			863
Ser Pro Ser Leu Gln Gly Leu Thr Ser Leu Lys Arg Leu Val Leu Asp			
	195	200	205
gga aac ctg ttg aac aat cat ggt tta ggt gac aaa gtt ttc ttc aac			911
Gly Asn Leu Leu Asn Asn His Gly Leu Gly Asp Lys Val Phe Phe Asn			
	210	215	220
cta gtt aat ttg aca gag ctg tcc ctg gtg cgg aat tcc ctg act gct			959
Leu Val Asn Leu Thr Glu Leu Ser Leu Val Arg Asn Ser Leu Thr Ala			
	225	230	235
gca cca gta aac ctt cca ggc aca aac ctg agg aag ctt tat ctt caa			1007
Ala Pro Val Asn Leu Pro Gly Thr Asn Leu Arg Lys Leu Tyr Leu Gln			
240	245	250	255
gat aac cac atc aat cgg gtg ccc cca aat gct ttt tct tat cta agg			1055
Asp Asn His Ile Asn Arg Val Pro Pro Asn Ala Phe Ser Tyr Leu Arg			
	260	265	270
cag ctc tat cga ctg gat atg tcc aat aat aac cta agt aat tta cct			1103
Gln Leu Tyr Arg Leu Asp Met Ser Asn Asn Asn Leu Ser Asn Leu Pro			
	275	280	285
cag ggt atc ttt gat gat ttg gac aat ata aca caa ctg att ctt cgc			1151
Gln Gly Ile Phe Asp Asp Leu Asp Asn Ile Thr Gln Leu Ile Leu Arg			
	290	295	300
aac aat ccc tgg tat tgc ggg tgc aag atg aaa tgg gta cgt gac tgg			1199
Asn Asn Pro Trp Tyr Cys Gly Cys Lys Met Lys Trp Val Arg Asp Trp			
	305	310	315
tta caa tca cta cct gtg aag gtc aac gtg cgt ggg ctc atg tgc caa			1247
Leu Gln Ser Leu Pro Val Lys Val Asn Val Arg Gly Leu Met Cys Gln			

320	325	330	335	
gcc cca gaa aag gtt cgt ggg atg gct att aag gat ctc aat gca gaa				1295
Ala Pro Glu Lys Val Arg Gly Met Ala Ile Lys Asp Leu Asn Ala Glu				
340		345	350	
ctg ttt gat tgt aag gac agt ggg att gta agc acc att cag ata acc				1343
Leu Phe Asp Cys Lys Asp Ser Gly Ile Val Ser Thr Ile Gln Ile Thr				
355		360	365	
act gca ata ccc aac aca gtg tat cct gcc caa gga cag tgg cca gct				1391
Thr Ala Ile Pro Asn Thr Val Tyr Pro Ala Gln Gly Gln Trp Pro Ala				
370		375	380	
cca gtg acc aaa cag cca gat att aag aac ccc aag ctc act aag gat				1439
Pro Val Thr Lys Gln Pro Asp Ile Lys Asn Pro Lys Leu Thr Lys Asp				
385		390	395	
cac caa acc aca ggg agt ccc tca aga aaa aca att aca att act gtg				1487
His Gln Thr Thr Gly Ser Pro Ser Arg Lys Thr Ile Thr Ile Thr Val				
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aag tct gtc acc tct gat acc att cat atc tct tgg aaa ctt gct cta				1535
Lys Ser Val Thr Ser Asp Thr Ile His Ile Ser Trp Lys Leu Ala Leu				
420		425	430	
cct atg act gct ttg aga ctc agc tgg ctt aaa ctg ggc cat agc ccg				1583
Pro Met Thr Ala Leu Arg Leu Ser Trp Leu Lys Leu Gly His Ser Pro				
435		440	445	
gca ttt gga tct ata aca gaa aca att gta aca ggg gaa cgc agt gag				1631
Ala Phe Gly Ser Ile Thr Glu Thr Ile Val Thr Gly Glu Arg Ser Glu				
450		455	460	
tac ttg gtc aca gcc ctg gag cct gat tca ccc tat aaa gta tgc atg				1679
Tyr Leu Val Thr Ala Leu Glu Pro Asp Ser Pro Tyr Lys Val Cys Met				
465		470	475	
gtt ccc atg gaa acc agc aac ctc tac cta ttt gat gaa act cct gtt				1727
Val Pro Met Glu Thr Ser Asn Leu Tyr Leu Phe Asp Glu Thr Pro Val				
480		485	490	495
tgt att gag act gaa act gca ccc ctt cga atg tac aac cct aca acc				1775
Cys Ile Glu Thr Glu Thr Ala Pro Leu Arg Met Tyr Asn Pro Thr Thr				
500		505	510	
acc ctc aat cga gag caa gag aaa gaa cct tac aaa aac ccc aat tta				1823
Thr Leu Asn Arg Glu Gln Glu Lys Glu Pro Tyr Lys Asn Pro Asn Leu				
515		520	525	
cct ttg gct gcc atc att ggt ggg gct gtg gcc ctg gtt acc att gcc				1871
Pro Leu Ala Ala Ile Ile Gly Gly Ala Val Ala Leu Val Thr Ile Ala				
530		535	540	
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Leu Leu Ala Leu Val Cys Trp Tyr Val His Arg Asn Gly Ser Leu Phe				
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Ser Arg Asn Cys Ala Tyr Ser Lys Gly Arg Arg Arg Lys Asp Asp Tyr				
560		565	570	575
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Glu Phe Val Ile His Thr Ile Phe Pro Pro Asn Gly Met Asn Leu Tyr				
	610	615	620	
aaa aac aat cac agt gaa agc agt agt aac cga agc tac aga gac agt				2159
Lys Asn Asn His Ser Glu Ser Ser Ser Asn Arg Ser Tyr Arg Asp Ser				
	625	630	635	
ggt att cca gac tca gat cac tca cac tca tga tgc tgaag gactcacagc				2210
Gly Ile Pro Asp Ser Asp His Ser His Ser *				
	640	645	650	
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ttgctgaata aaacttttaa aaagtacaga ataattgtgc ttgctttttc aggattgtgt 3650
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ctgccagtgg tagcgtcgt ctggcggagc tggttgttgg tcttgacgat attatggatg 360
aaggagtgtg taaagaaagt ggcaatgata ccattgatga agaagaactg attttaccta 420
acaggaactt aagggacaag gtagaagaaa attcagttag atctccaaga aaatcacctc 480
gtttaatggc acaagaacaa gtaagaagtt tgcgacagag cactattgcc aagcgttcaa 540
atgcagcacc attaagtaac acaaaaaaag catctgggaa gactgtatct actgctaaag 600
caggagtga acaaccagaa aggagtcagg ttaaagaaga agtatgtatg tcaactgaaac 660
ctgagtacca taaggagaat agaagggtgca gccgaaatag cggacaaatt gaagtggtag 720
ctgaagtatc agtgtcttca agtcattctt cagtgtcatc ttgtcttgaa atgaaggatg 780
aagaatgatt agactctaag gattatgtgt aataatccgg gagacataga tgtgccatct 840
catgaattaa attgttcact tctttcagag acttgtgtta ctattggaga aaagaaaaat 900
gaagctttga tggaatgtaa agccaagcct gttggtagtc caattgttta agttttcaga 960
taaagaagaa catgaacaaa atgattccat ttcaggtaaa acgggtgaga ctgttggtga 1020
agaaatgata gcaacaagaa aagttgaaca agattcaaag gagacagaaa aattatccca 1080
tgaagatgac catattcttg aggacgctgg atcttctgat atttctagtg atgctgcttg 1140
tacaaatcca aataagacag aaaacagcct tgtaggtttg cctagttgtg tagatgaagt 1200
gactgaatgt aatttggaa tgaaggatac catgggtatt gctgataaaa ctgagaacac 1260
ccttgacaga actaaaattg aaccgttggg ttattgtgaa gatgcggagt ctaataggca 1320
gttggagagc actgagttta ataatcaaa cttagaggtg gttgatacta gtacttttgg 1380

accggaaggt	aatatcttgt	aaaatgctat	tttgtgatgtg	cctgaccaaa	attcaaaaca		1440
gttgaatgct	atagaaagta	ctaaaataga	gtcccatgaa	acagcaaacc	ttcaggatga		1500
cagaaacagc	cagtcaagta	gcgttttcta	cttagagtca	aaaagtgtaa	aatccaaaca		1560
tacaaaaacct	gtaattcatt	ctaagcaaaa	c	atg acc aca gat gct ccg aag			1612
				Met Thr Thr Asp Ala Pro Lys			
				1	5		
aaa att gtt gca gca aag tat gaa gta ata cat agc aaa act aaa gtt							1660
Lys Ile Val Ala Ala Lys Tyr Glu Val Ile His Ser Lys Thr Lys Val							
	10			15		20	
aat gtc aaa agt gtg aaa cga aat act gat gta cca gaa tct cag caa							1708
Asn Val Lys Ser Val Lys Arg Asn Thr Asp Val Pro Glu Ser Gln Gln							
	25			30		35	
aat ctg cat agg cca gtc aaa gtc aga aaa aaa caa att gat aag gag							1756
Asn Leu His Arg Pro Val Lys Val Arg Lys Lys Lys Gln Ile Asp Lys Glu							
	40			45		50	55
cca aag att cag agt tgc aat tct ggg gtt aaa tct gtg aaa aac caa							1804
Pro Lys Ile Gln Ser Cys Asn Ser Gly Val Lys Ser Val Lys Asn Gln							
		60				65	70
gct cat tct gta ctg aaa aaa aca tta cag gat caa act tta gta caa							1852
Ala His Ser Val Leu Lys Lys Thr Leu Gln Asp Gln Thr Leu Val Gln							
		75				80	85
att ttc aag ccc tta act cat tct ttg agt gat aag tca cac gct cat							1900
Ile Phe Lys Pro Leu Thr His Ser Leu Ser Asp Lys Ser His Ala His							
	90					95	100
cct ggt tgc ttg aaa gaa cct cat cat cct gca caa act gga cat gta							1948
Pro Gly Cys Leu Lys Glu Pro His His Pro Ala Gln Thr Gly His Val							
	105					110	115
tca cat tct agc cag aaa cag tgt cat aag cct cag caa cag gcc cca							1996
Ser His Ser Ser Gln Lys Gln Cys His Lys Pro Gln Gln Gln Ala Pro							
	120					125	130
							135
gca atg aaa acc aat agt cac gtg aag gaa gag ctt gaa cac cca ggc							2044
Ala Met Lys Thr Asn Ser His Val Lys Glu Glu Leu Glu His Pro Gly							
			140				145
							150
gtt gag cat ttt aag gaa gag gat aaa ctg aaa ctg aaa aaa cct gag							2092
Val Glu His Phe Lys Glu Glu Asp Lys Leu Lys Leu Lys Lys Pro Glu							
		155				160	165
aag aac cta caa ccc cgc caa aga aga agc agc aaa agt ttt tct tta							2140
Lys Asn Leu Gln Pro Arg Gln Arg Arg Ser Ser Lys Ser Phe Ser Leu							
		170				175	180
gat gag cca cca ttg ttc att cca gat aac ata gct acc ata aga aga							2188
Asp Glu Pro Pro Leu Phe Ile Pro Asp Asn Ile Ala Thr Ile Arg Arg							
		185				190	195
gaa ggc tct gat cat agc tcc tca ttt gaa agc aaa tat atg tgg act							2236
Glu Gly Ser Asp His Ser Ser Ser Phe Glu Ser Lys Tyr Met Trp Thr							
	200					205	210
							215
ccc agc aag cag tgt qqq ttt tgc aaa aaa cca cat ggc aac agg ttt							2284

Pro	Ser	Lys	Gln	Cys	Gly	Phe	Cys	Lys	Lys	Pro	His	Gly	Asn	Arg	Phe	
				220					225					230		
atg	gtt	ggc	tgt	ggg	aga	tgt	gat	gac	tgg	ttt	cat	ggc	gat	tgt	gtt	2332
Met	Val	Gly	Cys	Gly	Arg	Cys	Asp	Asp	Trp	Phe	His	Gly	Asp	Cys	Val	
			235					240					245			
ggg	tta	agt	ctt	tct	caa	gca	cag	cag	atg	ggc	gag	gaa	gac	aaa	gaa	2380
Gly	Leu	Ser	Leu	Ser	Gln	Ala	Gln	Gln	Met	Gly	Glu	Glu	Asp	Lys	Glu	
		250					255					260				
tat	gtc	tgt	gta	aaa	tgt	tgt	gct	gaa	gaa	gac	aaa	aag	act	gaa	ata	2428
Tyr	Val	Cys	Val	Lys	Cys	Cys	Ala	Glu	Glu	Asp	Lys	Lys	Thr	Glu	Ile	
	265					270					275					
cta	gat	cca	gat	act	ttg	gaa	aac	caa	gct	aca	gtt	gaa	ttc	cat	agt	2476
Leu	Asp	Pro	Asp	Thr	Leu	Glu	Asn	Gln	Ala	Thr	Val	Glu	Phe	His	Ser	
280					285					290					295	
gga	gat	aaa	aca	atg	gag	tgt	gaa	aag	ctt	gga	tta	tca	aaa	cac	aca	2524
Gly	Asp	Lys	Thr	Met	Glu	Cys	Glu	Lys	Leu	Gly	Leu	Ser	Lys	His	Thr	
			300					305						310		
aca	aat	gat	aga	acc	aaa	tat	ata	gat	gat	aca	gtg	aag	cac	aag	gtc	2572
Thr	Asn	Asp	Arg	Thr	Lys	Tyr	Ile	Asp	Asp	Thr	Val	Lys	His	Lys	Val	
			315					320					325			
aaa	att	tta	aaa	cgg	gag	tct	ggc	gaa	ggc	aga	aat	tca	tca	gac	tgt	2620
Lys	Ile	Leu	Lys	Arg	Glu	Ser	Gly	Glu	Gly	Arg	Asn	Ser	Ser	Asp	Cys	
		330					335					340				
aga	gat	aat	gaa	att	aaa	aaa	tgg	cag	cta	gct	cct	ctt	cgt	aag	atg	2668
Arg	Asp	Asn	Glu	Ile	Lys	Lys	Trp	Gln	Leu	Ala	Pro	Leu	Arg	Lys	Met	
	345					350					355					
gga	caa	cca	gtt	tta	cct	cgg	aga	tcc	tca	gaa	gaa	aaa	agt	gaa	aaa	2716
Gly	Gln	Pro	Val	Leu	Pro	Arg	Arg	Ser	Ser	Glu	Glu	Lys	Ser	Glu	Lys	
360					365					370					375	
ata	ccg	aaa	gag	tct	aca	act	gtt	act	tgc	aca	gga	gaa	aaa	gct	tca	2764
Ile	Pro	Lys	Glu	Ser	Thr	Thr	Val	Thr	Cys	Thr	Gly	Glu	Lys	Ala	Ser	
			380						385					390		
aaa	cca	ggc	act	cat	gag	aag	caa	gag	atg	aaa	aag	aag	aaa	gtt	gaa	2812
Lys	Pro	Gly	Thr	His	Glu	Lys	Gln	Glu	Met	Lys	Lys	Lys	Lys	Val	Glu	
			395					400					405			
aaa	gga	gtg	ctt	aat	gta	cat	cct	gct	gct	tct	gct	tcc	aag	cct	tct	2860
Lys	Gly	Val	Leu	Asn	Val	His	Pro	Ala	Ala	Ser	Ala	Ser	Lys	Pro	Ser	
		410					415					420				
gca	gat	cag	atc	agg	caa	agt	gtc	aga	cat	tct	ctc	aaa	gac	att	ctt	2908
Ala	Asp	Gln	Ile	Arg	Gln	Ser	Val	Arg	His	Ser	Leu	Lys	Asp	Ile	Leu	
	425					430					435					
atg	aag	aga	ctt	aca	gac	tca	aat	ttg	aag	gta	cca	gag	gaa	aag	gca	2956
Met	Lys	Arg	Leu	Thr	Asp	Ser	Asn	Leu	Lys	Val	Pro	Glu	Glu	Lys	Ala	
	440				445				450						455	
gca	aaa	gtt	gcc	aca	aaa	att	gag	aaa	gag	ctt	ttc	tct	ttt	ttt	cgg	3004
Ala	Lys	Val	Ala	Thr	Lys	Ile	Glu	Lys	Glu	Leu	Phe	Ser	Phe	Phe	Arg	
			460					465						470		
gac	aca	gat	gct	aaa	tat	aag	aac	aaa	tat	aga	agt	ttg	atg	ttt	aat	3052

Asp Thr Asp	Ala Lys Tyr Lys Asn Lys Tyr Arg Ser Leu Met Phe Asn	
475	480	485
ttg aaa gat cct aaa aac aat ata tta ttt aaa aaa gta ctg aaa gga		3100
Leu Lys Asp Pro Lys Asn Asn Ile Leu Phe Lys Lys Val Leu Lys Gly		
490	495	500
gaa gta act cct gat cat ctt atc aga atg agt cca gaa gaa cta gct		3148
Glu Val Thr Pro Asp His Leu Ile Arg Met Ser Pro Glu Glu Leu Ala		
505	510	515
tct aaa gag tta gct gct tgg aga cga aga gaa aac aga cat acc ata		3196
Ser Lys Glu Leu Ala Ala Trp Arg Arg Arg Glu Asn Arg His Thr Ile		
520	525	530
gaa atg att gag aaa gag cag aga gaa gtg gaa cga cgg cca atc acc		3244
Glu Met Ile Glu Lys Glu Gln Arg Glu Val Glu Arg Arg Pro Ile Thr		
540	545	550
aaa ata act cat aaa ggt gaa ata gaa att gag agt gat gcc cca atg		3292
Lys Ile Thr His Lys Gly Glu Ile Glu Ile Glu Ser Asp Ala Pro Met		
555	560	565
aaa gaa cag gaa gca gcc atg gag att cag gaa cca gcc gcc aat aag		3340
Lys Glu Gln Glu Ala Ala Met Glu Ile Gln Glu Pro Ala Ala Asn Lys		
570	575	580
tca ttg gag aag cca gaa gga tct gaa aaa caa aaa gag gag gtt gac		3388
Ser Leu Glu Lys Pro Glu Gly Ser Glu Lys Gln Lys Glu Glu Val Asp		
585	590	595
tct atg tct aaa gat acc act agt caa cac aga cag cat ctt ttt gat		3436
Ser Met Ser Lys Asp Thr Thr Ser Gln His Arg Gln His Leu Phe Asp		
600	605	615
ctc aac tgc aaa atc tgc ata ggt cga atg gca cca cct gta gat gat		3484
Leu Asn Cys Lys Ile Cys Ile Gly Arg Met Ala Pro Pro Val Asp Asp		
620	625	630
ctt tct cca aaa aaa gta aaa gtt gtt gta gga gta gct cgc aaa cat		3532
Leu Ser Pro Lys Lys Val Lys Val Val Val Gly Val Ala Arg Lys His		
635	640	645
tca gac aat gaa gca gaa agt ata gca gat gca tta tct tca acc tca		3580
Ser Asp Asn Glu Ala Glu Ser Ile Ala Asp Ala Leu Ser Ser Thr Ser		
650	655	660
aat att ttg gct tct gaa ttc ttt gag gag gag aaa cag gag tct cca		3628
Asn Ile Leu Ala Ser Glu Phe Phe Glu Glu Glu Lys Gln Glu Ser Pro		
665	670	675
aag tca acg ttc tct cct gct cca cgt cca gag atg cct gga act gtt		3676
Lys Ser Thr Phe Ser Pro Ala Pro Arg Pro Glu Met Pro Gly Thr Val		
680	685	690
gaa gtt gag tct acc ttt ctg gct cga ttg aac ttc atc tgg aaa ggt		3724
Glu Val Glu Ser Thr Phe Leu Ala Arg Leu Asn Phe Ile Trp Lys Gly		
700	705	710
ttt atc aac atg cct tct gtg gca aaa ttt gtt acc aaa gcc tat cca		3772
Phe Ile Asn Met Pro Ser Val Ala Lys Phe Val Thr Lys Ala Tyr Pro		
715	720	725
gta tct ggc tcc cca gaa tac ctg aca gag gac cta cca gat agt att		3820

Val	Ser	Gly	Ser	Pro	Glu	Tyr	Leu	Thr	Glu	Asp	Leu	Pro	Asp	Ser	Ile	
		730					735					740				
caa	gta	ggc	ggc	agg	ata	tca	cct	cag	aca	ggt	tgg	gat	tat	gtg	gaa	3868
Gln	Val	Gly	Gly	Arg	Ile	Ser	Pro	Gln	Thr	Val	Trp	Asp	Tyr	Val	Glu	
	745					750					755					
aaa	ata	aaa	gca	tca	gga	acc	aag	gaa	att	tgt	gtg	ggt	cgc	ttc	aca	3916
Lys	Ile	Lys	Ala	Ser	Gly	Thr	Lys	Glu	Ile	Cys	Val	Val	Arg	Phe	Thr	
760					765					770					775	
cca	gta	act	gaa	gaa	gat	caa	att	tct	tat	act	ttg	ctc	ttt	gca	tac	3964
Pro	Val	Thr	Glu	Glu	Asp	Gln	Ile	Ser	Tyr	Thr	Leu	Leu	Phe	Ala	Tyr	
				780						785					790	
ttc	agt	agc	aga	aag	cgc	tat	gga	gta	gct	gct	aac	aac	atg	aag	cag	4012
Phe	Ser	Ser	Arg	Lys	Arg	Tyr	Gly	Val	Ala	Ala	Asn	Asn	Met	Lys	Gln	
			795					800					805			
ggt	aaa	gat	atg	tac	ctt	att	cct	ttg	ggc	gcc	aca	gat	aaa	att	cca	4060
Val	Lys	Asp	Met	Tyr	Leu	Ile	Pro	Leu	Gly	Ala	Thr	Asp	Lys	Ile	Pro	
		810					815					820				
cac	cct	ctt	gtg	cct	ttt	gat	gga	cct	ggg	ctt	gaa	ctg	cat	aga	cct	4108
His	Pro	Leu	Val	Pro	Phe	Asp	Gly	Pro	Gly	Leu	Glu	Leu	His	Arg	Pro	
		825				830					835					
aat	cta	ttg	ttg	ggc	tta	att	att	cgt	cag	aaa	ctg	aag	cga	cag	cac	4156
Asn	Leu	Leu	Leu	Gly	Leu	Ile	Ile	Arg	Gln	Lys	Leu	Lys	Arg	Gln	His	
840					845					850					855	
agt	gcc	tgt	gct	agt	act	agt	cat	ata	gct	gag	act	cct	gaa	agt	gca	4204
Ser	Ala	Cys	Ala	Ser	Thr	Ser	His	Ile	Ala	Glu	Thr	Pro	Glu	Ser	Ala	
				860					865					870		
cca	cca	ata	gca	ttg	cca	cct	gat	aaa	aaa	agt	aaa	ata	gaa	ggt	tct	4252
Pro	Pro	Ile	Ala	Leu	Pro	Pro	Asp	Lys	Lys	Ser	Lys	Ile	Glu	Val	Ser	
			875					880					885			
aca	gaa	gaa	gca	cca	gag	gaa	gaa	aat	gac	ttt	ttt	aat	tct	ttt	aca	4300
Thr	Glu	Glu	Ala	Pro	Glu	Glu	Glu	Asn	Asp	Phe	Phe	Asn	Ser	Phe	Thr	
		890					895					900				
act	gta	tta	cac	aag	cag	aga	aat	aaa	cct	cag	cag	aat	ctt	cag	gaa	4348
Thr	Val	Leu	His	Lys	Gln	Arg	Asn	Lys	Pro	Gln	Gln	Asn	Leu	Gln	Glu	
		905				910						915				
gac	ctt	cca	aca	gca	ggt	gaa	cct	tta	atg	gaa	gtc	acc	aaa	cag	gag	4396
Asp	Leu	Pro	Thr	Ala	Val	Glu	Pro	Leu	Met	Glu	Val	Thr	Lys	Gln	Glu	
					925					930					935	
cca	cca	aaa	cct	tta	aga	ttt	ctt	cct	ggc	gtg	ttg	att	ggc	tgg	gag	4444
Pro	Pro	Lys	Pro	Leu	Arg	Phe	Leu	Pro	Gly	Val	Leu	Ile	Gly	Trp	Glu	
				940					945					950		
aat	caa	cct	act	act	ctg	gaa	tta	gca	aat	aaa	cct	ctt	cct	gtg	gat	4492
Asn	Gln	Pro	Thr	Thr	Leu	Glu	Leu	Ala	Asn	Lys	Pro	Leu	Pro	Val	Asp	
			955					960					965			
gat	ata	ctt	caa	agc	ctt	ttg	ggc	acc	act	ggc	caa	gta	tat	gac	cag	4540
Asp	Ile	Leu	Gln	Ser	Leu	Leu	Gly	Thr	Thr	Gly	Gln	Val	Tyr	Asp	Gln	
		970					975					980				
gcc	cag	tca	gtg	atg	gaa	caa	aac	act	ggt	aaa	gaa	att	cca	ttt	tta	4588

Ala Gln Ser Val Met Glu Gln Asn Thr Val Lys Glu Ile Pro Phe Leu	
985 990 995	
aat gag cag acc aac tca aaa ata gag aaa aca gat aat gtg gaa gta	4636
Asn Glu Gln Thr Asn Ser Lys Ile Glu Lys Thr Asp Asn Val Glu Val	
1000 1005 1010 1015	
act gat ggt gaa aac aag gag ata aaa gtt aaa gta gat aat att tca	4684
Thr Asp Gly Glu Asn Lys Glu Ile Lys Val Lys Val Asp Asn Ile Ser	
1020 1025 1030	
gaa tct aca gat aag tca gca gaa ata gaa aca tca gta gta ggg tcc	4732
Glu Ser Thr Asp Lys Ser Ala Glu Ile Glu Thr Ser Val Val Gly Ser	
1035 1040 1045	
tct tcc att tct gca ggg tct ttg acg agt ctt agt ctc aga ggt aag	4780
Ser Ser Ile Ser Ala Gly Ser Leu Thr Ser Leu Ser Leu Arg Gly Lys	
1050 1055 1060	
cca cca gat gtt tct aca gaa gca ttt tta aca aat tta tca att cag	4828
Pro Pro Asp Val Ser Thr Glu Ala Phe Leu Thr Asn Leu Ser Ile Gln	
1065 1070 1075	
tca aaa caa gag gaa act gtg gag agt aaa gag aaa aca tta aaa aga	4876
Ser Lys Gln Glu Glu Thr Val Glu Ser Lys Glu Lys Thr Leu Lys Arg	
1080 1085 1090 1095	
cag ctt cag gaa gat caa gag aat aat ttg caa gat aac cag act tca	4924
Gln Leu Gln Glu Asp Gln Glu Asn Asn Leu Gln Asp Asn Gln Thr Ser	
1100 1105 1110	
aat agt tct cca tgc aga tct aat gta gga aaa gga aac ata gat ggt	4972
Asn Ser Ser Pro Cys Arg Ser Asn Val Gly Lys Gly Asn Ile Asp Gly	
1115 1120 1125	
aat gtg agc tgt agt gaa aac ctt gtt gct aat aca gcg agg tct cca	5020
Asn Val Ser Cys Ser Glu Asn Leu Val Ala Asn Thr Ala Arg Ser Pro	
1130 1135 1140	
cag ttt atc aac ctg aaa agg gat cct agg caa gca gca gga cga agt	5068
Gln Phe Ile Asn Leu Lys Arg Asp Pro Arg Gln Ala Ala Gly Arg Ser	
1145 1150 1155	
cag cct gta act act tca gaa agc aaa gat gga gat agt tgc cgg aat	5116
Gln Pro Val Thr Thr Ser Glu Ser Lys Asp Gly Asp Ser Cys Arg Asn	
1160 1165 1170 1175	
gga gaa aaa cac atg ctg cct ggc ctg tca cac aac aag gag cac tta	5164
Gly Glu Lys His Met Leu Pro Gly Leu Ser His Asn Lys Glu His Leu	
1180 1185 1190	
aca gaa caa atc aat gta gag gaa aag ttg tgt tct gca gag aaa aac	5212
Thr Glu Gln Ile Asn Val Glu Glu Lys Leu Cys Ser Ala Glu Lys Asn	
1195 1200 1205	
tcg tgt gtt cag cag agt gac aat tta aaa gtt gca caa aac tca cca	5260
Ser Cys Val Gln Gln Ser Asp Asn Leu Lys Val Ala Gln Asn Ser Pro	
1210 1215 1220	
tca gta gaa aac ata cag act tct caa gca gaa caa gca aaa ccc tta	5308
Ser Val Glu Asn Ile Gln Thr Ser Gln Ala Glu Gln Ala Lys Pro Leu	
1225 1230 1235	
cag gag gat att tta atg caa aat att gaa act gtg cac cca ttt cga	5356

Gln Glu Asp Ile Leu Met Gln Asn Ile Glu Thr Val His Pro Phe Arg	
1240 1245 1250 1255	
aga gga tca gca gta gcg aca tct cat ttt gaa gtt gga aac aca tgt	5404
Arg Gly Ser Ala Val Ala Thr Ser His Phe Glu Val Gly Asn Thr Cys	
1260 1265 1270	
cca tca gaa ttt cct tct aaa agc atc acc ttt act tcc aga agc acc	5452
Pro Ser Glu Phe Pro Ser Lys Ser Ile Thr Phe Thr Ser Arg Ser Thr	
1275 1280 1285	
agc ccc aga aca agt aca aac ttt tca ccc atg agg cca cag cag ccc	5500
Ser Pro Arg Thr Ser Thr Asn Phe Ser Pro Met Arg Pro Gln Gln Pro	
1290 1295 1300	
aac ctt cag cat ctc aag tct agc cca cct gga ttt cca ttt cca ggg	5548
Asn Leu Gln His Leu Lys Ser Ser Pro Pro Gly Phe Pro Phe Pro Gly	
1305 1310 1315	
cct cct aat ttt ccc cca caa agc atg ttt gga ttt cca cca cat ttg	5596
Pro Pro Asn Phe Pro Pro Gln Ser Met Phe Gly Phe Pro Pro His Leu	
1320 1325 1330 1335	
cca cct cca tta ctt ccc cct cca ggc ttt ggc ttt gct caa aat ccc	5644
Pro Pro Pro Leu Leu Pro Pro Pro Gly Phe Gly Phe Ala Gln Asn Pro	
1340 1345 1350	
atg gtt ccc tgg cca cct gtt gtt cat ctc cca ggt cag cca cag cgt	5692
Met Val Pro Trp Pro Pro Val Val His Leu Pro Gly Gln Pro Gln Arg	
1355 1360 1365	
atg atg ggt cct ctc tca caa gca tca agg tat ata ggc ccg cag aat	5740
Met Met Gly Pro Leu Ser Gln Ala Ser Arg Tyr Ile Gly Pro Gln Asn	
1370 1375 1380	
ttt tac cag gtt aaa gac att cgg agg cca gaa agg cgc cat agt gac	5788
Phe Tyr Gln Val Lys Asp Ile Arg Arg Pro Glu Arg Arg His Ser Asp	
1385 1390 1395	
cct tgg ggt agg caa gac caa cag caa ctg gat agg cca ttt aat agg	5836
Pro Trp Gly Arg Gln Asp Gln Gln Gln Leu Asp Arg Pro Phe Asn Arg	
1400 1405 1410 1415	
ggt aaa ggg gac cgc cag aga ttt tat agt gat tca cac cat ttg aaa	5884
Gly Lys Gly Asp Arg Gln Arg Phe Tyr Ser Asp Ser His His Leu Lys	
1420 1425 1430	
aga gag cga cat gaa aag gaa tgg gag caa gaa tct gaa agg cat aga	5932
Arg Glu Arg His Glu Lys Glu Trp Glu Gln Glu Ser Glu Arg His Arg	
1435 1440 1445	
cgc aga gac aga agc caa gac aag gac aga gac aga aaa agc agg gag	5980
Arg Arg Asp Arg Ser Gln Asp Lys Asp Arg Asp Arg Lys Ser Arg Glu	
1450 1455 1460	
gaa ggg cac aaa gat aaa gag agg gca cgg tta tca cat ggt gat cga	6028
Glu Gly His Lys Asp Lys Glu Arg Ala Arg Leu Ser His Gly Asp Arg	
1465 1470 1475	
gga aca gat gga aaa gca agc aga gat agt agg aat gta gac aag aag	6076
Gly Thr Asp Gly Lys Ala Ser Arg Asp Ser Arg Asn Val Asp Lys Lys	
1480 1485 1490 1495	
cca gat aaa cct aaa agt gaa gac tat gag aag gac aaa gaa cga gag	6124

Pro	Asp	Lys	Pro	Lys	Ser	Glu	Asp	Tyr	Glu	Lys	Asp	Lys	Glu	Arg	Glu	
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Lys	Ser	Lys	His	Arg	Glu	Gly	Glu	Lys	Asp	Arg	Asp	Arg	Tyr	His	Lys	
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gat	agg	gac	cac	act	gac	aga	act	aaa	agc	aaa	agg	taa	aatttgcagg			6221
Asp	Arg	Asp	His	Thr	Asp	Arg	Thr	Lys	Ser	Lys	Arg	*				
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cccagcaggc ccagccaggc gtggaggaag aggcattgag gactttcctt acctgttttt	180
ccagctcacc cactgccagc agaga atg ctg tcc agt ttc aac gag tgg ttt	232
Met Leu Ser Ser Phe Asn Glu Trp Phe	
1 5	
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Trp Gln Asp Arg Phe Trp Leu Pro Pro Asn Val Thr Trp Thr Glu Leu	
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Ala Leu Pro Leu Ala Leu Val Leu Leu Ala Met Arg Leu Ala Phe Glu	
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Arg Phe Ile Gly Leu Pro Leu Ser Arg Trp Leu Gly Val Arg Asp Gln	
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acc agg agg caa gtg aag ccc aac gcc acg ctg gag aaa cac ttc ctc	472
Thr Arg Arg Gln Val Lys Pro Asn Ala Thr Leu Glu Lys His Phe Leu	
75 80 85	
acg gaa ggg cac agg ccc aag gag ccc cag ctg tct ctc ctg gcc gcc	520
Thr Glu Gly His Arg Pro Lys Glu Pro Gln Leu Ser Leu Leu Ala Ala	
90 95 100 105	
cag tgt ggc ctc acg ctg cag cag acc cag cga tgg ttc cgg aga cgc	568
Gln Cys Gly Leu Thr Leu Gln Gln Thr Gln Arg Trp Phe Arg Arg Arg	
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cgg aac cag gat cga ccc cag ctg acc aag aag ttc tgt gag gcc agc	616
Arg Asn Gln Asp Arg Pro Gln Leu Thr Lys Lys Phe Cys Glu Ala Ser	
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Trp Arg Phe Leu Phe Tyr Leu Ser Ser Phe Val Gly Gly Leu Ser Val	
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Leu Tyr His Glu Ser Trp Leu Trp Ala Pro Val Met Cys Trp Asp Arg	
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Tyr Pro Asn Gln Thr Leu Lys Pro Ser Leu Tyr Trp Trp Tyr Leu Leu	
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Glu Leu Gly Phe Tyr Leu Ser Leu Leu Ile Arg Leu Pro Phe Asp Val	
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Lys Arg Lys Asp Phe Lys Glu Gln Val Ile His His Phe Val Ala Val	
205 210 215	
atc ctg atg acc ttc tcc tac agt gcc aac ctg ctg cgc att ggc tct	904
Ile Leu Met Thr Phe Ser Tyr Ser Ala Asn Leu Leu Arg Ile Gly Ser	
220 225 230	

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Leu Val Leu Leu Leu His Asp Ser Ser Asp Tyr Leu Leu Glu Ala Cys
235 240 245

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Lys Met Val Asn Tyr Met Gln Tyr Gln Gln Val Cys Asp Ala Leu Phe
250 255 260 265

ctc atc ttc tcc ttt gtc ttc ttc tac acc cga ctg gtc ctc ttt ccc 1048
Leu Ile Phe Ser Phe Val Phe Phe Tyr Thr Arg Leu Val Leu Phe Pro
270 275 280

acc cag atc ctc tac acc aca tac tac gag tcc atc agc aac agg ggc 1096
Thr Gln Ile Leu Tyr Thr Thr Tyr Tyr Glu Ser Ile Ser Asn Arg Gly
285 290 295

ccc ttc ttc ggc tac tac ttc ttc aac ggg ctt ctg atg ttg ctg cag 1144
Pro Phe Phe Gly Tyr Tyr Phe Phe Asn Gly Leu Leu Met Leu Leu Gln
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315 320 325

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Phe Met Lys Lys Gly Gln Met Glu Lys Asp Ile Arg Ser Asp Val Glu
330 335 340 345

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Glu Ser Asp Ser Ser Glu Glu Ala Ala Ala Ala Gln Glu Pro Leu Gln
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Thr *
395

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Ser Ala Arg Leu Arg Thr Val Phe Gln Gly Val Gly His Trp Ala Leu
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tcc aca tgg gct ggc ctg aag ccc agc cgg cta ctg cca cag cgg gct   148
Ser Thr Trp Ala Gly Leu Lys Pro Ser Arg Leu Leu Pro Gln Arg Ala
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tct ccc agg ctg ctc tcg gtc ggc cgt gcg gac ctc gcc aag cat cag   196
Ser Pro Arg Leu Leu Ser Val Gly Arg Ala Asp Leu Ala Lys His Gln
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gaa ctc ccg ggg aag aag ctg ctc tct gag aaa aag ctg aaa agg tac   244
Glu Leu Pro Gly Lys Lys Leu Leu Ser Glu Lys Lys Leu Lys Arg Tyr
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ttt gtg gac tat cgg aga gtg ctt gtc tgt gga gga aac gga ggc gct   292
Phe Val Asp Tyr Arg Arg Val Leu Val Cys Gly Gly Asn Gly Gly Ala
          75                               80                               85

ggg gca agc tgc ttc cac agt gag ccc cgc aag gag ttt gga ggc cct   340
Gly Ala Ser Cys Phe His Ser Glu Pro Arg Lys Glu Phe Gly Gly Pro
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gat gga ggg gac gga ggc aac ggt gga cac gtc att ctg aga gtt gac   388
Asp Gly Gly Asp Gly Gly Asn Gly Gly His Val Ile Leu Arg Val Asp
          105                               110                               115

cag caa gtc aag tcc ctg tcg tcg gtc ctg tcg cgg tac cag ggt ttc   436
Gln Gln Val Lys Ser Leu Ser Ser Val Leu Ser Arg Tyr Gln Gly Phe
          120                               125                               130                               135

agt gga gaa gat gga ggg agt aaa aac tgc ttc ggg cgc agt ggc gcc   484
Ser Gly Glu Asp Gly Gly Ser Lys Asn Cys Phe Gly Arg Ser Gly Ala
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gtc ctc tac atc cgg gtc ccc gtg ggc acg ctg gtg aag gag gga ggc   532
Val Leu Tyr Ile Arg Val Pro Val Gly Thr Leu Val Lys Glu Gly Gly
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aga gtt gtg gcc gac ctg tct tgc gtg gga gat gag tac att gcc gcg   580
Arg Val Val Ala Asp Leu Ser Cys Val Gly Asp Glu Tyr Ile Ala Ala
          170                               175                               180

ctg ggc ggg gca gga ggg aaa ggc aac cgc ttc ttc ctg gcc aac aac   628
Leu Gly Gly Ala Gly Gly Lys Gly Asn Arg Phe Phe Leu Ala Asn Asn
          185                               190                               195

aac cgt gcc cct gtg acc tgt acc cct gga cag cca gga cag cag cga   676
Asn Arg Ala Pro Val Thr Cys Thr Pro Gly Gln Pro Gly Gln Gln Arg
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gtt ctc cac ctg gag ctc aag acg gcg gcc cac gcc gga atg ggg gga   724
Val Leu His Leu Glu Leu Lys Thr Ala Ala His Ala Gly Met Gly Gly
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Arg	Pro	Ala	Val	Ala	Ser	Tyr	Pro	Phe	Thr	Thr	Leu	Lys	Pro	His	Val		
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Gly	Ile	Val	His	Tyr	Glu	Gly	His	Leu	Gln	Ile	Ala	Val	Ala	Asp	Ile		
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ccc	ggc	atc	ata	cga	ggc	gcc	cac	cag	aac	agg	ggg	ctg	ggg	tcc	gcc		916
Pro	Gly	Ile	Ile	Arg	Gly	Ala	His	Gln	Asn	Arg	Gly	Leu	Gly	Ser	Ala		
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ttc	ctc	agg	cac	atc	gag	cgc	tgc	cgc	ttt	ctc	ttg	ttc	gtg	gtg	gat		964
Phe	Leu	Arg	His	Ile	Glu	Arg	Cys	Arg	Phe	Leu	Leu	Phe	Val	Val	Asp		
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Tyr	Ala	Glu	Ala	Glu	Leu	Gly	Gln	Gly	Arg	Gln	Pro	Leu	Arg	Trp	*		
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ttc act tct gag aaa ttc ctg gtc atg gct tca gag gat gcc ctg tgt Phe Thr Ser Glu Lys Phe Leu Val Met Ala Ser Glu Asp Ala Leu Cys 330 335 340	1661
act gtg ttg cat ctg aca gag aga ctt ttc ctt gac cac ccg cat aga Thr Val Leu His Leu Thr Glu Arg Leu Phe Leu Asp His Pro His Arg 345 350 355	1709
ctc act ggc aac aaa gtt cag cag tac cac cgg gct ctg gtg gcg gtg Leu Thr Gly Asn Lys Val Gln Gln Tyr His Arg Ala Leu Val Ala Val 360 365 370	1757
ctc ctg agc cgc acc tgg cac gtc cgc agg cag gct cag cag aca gtt Leu Leu Ser Arg Thr Trp His Val Arg Arg Gln Ala Gln Gln Thr Val 375 380 385 390	1805
cgg aag ctg ctg tcc tct ctt ggg ggc ttt aag ctg gcg cac gga ctc Arg Lys Leu Leu Ser Ser Leu Gly Gly Phe Lys Leu Ala His Gly Leu 395 400 405	1853
ttg gag gag ctg aag act gtc ctc agt tct cac aag gtg ctg ccc tta Leu Glu Glu Leu Lys Thr Val Leu Ser Ser His Lys Val Leu Pro Leu 410 415 420	1901
gag gct ttg gtg act gat gct gga gag gtg act gag gca ggc aag gcc Glu Ala Leu Val Thr Asp Ala Gly Glu Val Thr Glu Ala Gly Lys Ala 425 430 435	1949
tac gtg cct cca cgg gtc ctg cag gag gct ctg tgt gtc atc tcc ggt Tyr Val Pro Pro Arg Val Leu Gln Glu Ala Leu Cys Val Ile Ser Gly 440 445 450	1997

gtg cca ggg ctc aag ggt gat gtc acc gac act gaa caa ctg gcc cag	2045
Val Pro Gly Leu Lys Gly Asp Val Thr Asp Thr Glu Gln Leu Ala Gln	
455 460 465 470	
gaa atg ctg atc atc tcc cac cac cca tcc tta gtt gcc gtg cag tct	2093
Glu Met Leu Ile Ile Ser His His Pro Ser Leu Val Ala Val Gln Ser	
475 480 485	
gga ctt tgg cca gca ctt ctt gcc agg atg aag atc gat cct gaa gcc	2141
Gly Leu Trp Pro Ala Leu Leu Ala Arg Met Lys Ile Asp Pro Glu Ala	
490 495 500	
ttt atc acc agg cac ctg gat cag atc att ccc agg atg acc aca cag	2189
Phe Ile Thr Arg His Leu Asp Gln Ile Ile Pro Arg Met Thr Thr Gln	
505 510 515	
agt ccc cta aac cag tcc tcc atg aat gcc atg ggc tcc ctt tcc gtc	2237
Ser Pro Leu Asn Gln Ser Ser Met Asn Ala Met Gly Ser Leu Ser Val	
520 525 530	
ctg tcg ccg gac cgg gtc ctc cca cag ctc atc agc acc atc act tcc	2285
Leu Ser Pro Asp Arg Val Leu Pro Gln Leu Ile Ser Thr Ile Thr Ser	
535 540 545 550	
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Ser Val Gln Asn Pro Ala Leu Arg Leu Val Thr Arg Glu Glu Phe Ala	
555 560 565	
att atg cag acc cct gct ggg gag ctg tat gac aaa tcc atc att cag	2381
Ile Met Gln Thr Pro Ala Gly Glu Leu Tyr Asp Lys Ser Ile Ile Gln	
570 575 580	
agt gcc cag cag gac agc ata aaa aag gcc aac atg aag cga gag aac	2429
Ser Ala Gln Gln Asp Ser Ile Lys Lys Ala Asn Met Lys Arg Glu Asn	
585 590 595	
aaa gct tat tcc ttc aaa gag cag atc atc gag ctg gag ctg aag gag	2477
Lys Ala Tyr Ser Phe Lys Glu Gln Ile Ile Glu Leu Glu Leu Lys Glu	
600 605 610	
gag ata aag aag aag aaa ggc atc aaa gag gag gtg cag ctg acc agc	2525
Glu Ile Lys Lys Lys Lys Gly Ile Lys Glu Glu Val Gln Leu Thr Ser	
615 620 625 630	
aag cag aag gag atg ctg cag gcc cag cta gac agg gag gcg cag gtc	2573
Lys Gln Lys Glu Met Leu Gln Ala Gln Leu Asp Arg Glu Ala Gln Val	
635 640 645	
cgg agg cgg ctg cag gag ctg gat ggg gag ctg gag gcg gcg ctt gga	2621
Arg Arg Arg Leu Gln Glu Leu Asp Gly Glu Leu Glu Ala Ala Leu Gly	
650 655 660	
ctg ctg gac atc atc ctg gcc aag aag tcg acc ggc ctg acc cag tac	2669
Leu Leu Asp Ile Ile Leu Ala Lys Lys Ser Thr Gly Leu Thr Gln Tyr	
665 670 675	
atc cct gtt ttg gtc gac tct ttt ctg ccc ttg ctg aag tct ccc ctg	2717
Ile Pro Val Leu Val Asp Ser Phe Leu Pro Leu Leu Lys Ser Pro Leu	
680 685 690	
gct gct ccc agg atc aag aac ccc ttc ttg tcc ttg gct gcc tgt gtc	2765
Ala Ala Pro Arg Ile Lys Asn Pro Phe Leu Ser Leu Ala Ala Cys Val	
695 700 705 710	

atg ccc tct agg ctc aag gct ttg ggc act ttg gtg agc cac gtg acc	2813
Met Pro Ser Arg Leu Lys Ala Leu Gly Thr Leu Val Ser His Val Thr	
715 720 725	
ctg cgc ctg ctg aag cca gag tgt gtc ctg gat aag tcc tgg tgc cag	2861
Leu Arg Leu Leu Lys Pro Glu Cys Val Leu Asp Lys Ser Trp Cys Gln	
730 735 740	
gaa gag ctg tct gtg gct gtg aag agg gcg gtg atg ctg ctg cac acc	2909
Glu Glu Leu Ser Val Ala Val Lys Arg Ala Val Met Leu Leu His Thr	
745 750 755	
cac acc atc acc agc agg gtg ggc aag ggg gag cca ggt gct gcg ccc	2957
His Thr Ile Thr Ser Arg Val Gly Lys Gly Glu Pro Gly Ala Ala Pro	
760 765 770	
ttg tcc gcg cca gcc ttc tcc tta gtc ttc ccg ttt ctg aag atg gtg	3005
Leu Ser Ala Pro Ala Phe Ser Leu Val Phe Pro Phe Leu Lys Met Val	
775 780 785 790	
ctg acg gag atg ccc cac cac agt gag gag gag gag gag tgg atg gcc	3053
Leu Thr Glu Met Pro His His Ser Glu Glu Glu Glu Glu Trp Met Ala	
795 800 805	
cag att ctt cag atc ctc act gtc caa gcc cag ctg agg gcc tcc ccc	3101
Gln Ile Leu Gln Ile Leu Thr Val Gln Ala Gln Leu Arg Ala Ser Pro	
810 815 820	
aac acc cca ccc ggg cgg gtg gac gag aat ggc ccg gag ttg ctg cct	3149
Asn Thr Pro Pro Gly Arg Val Asp Glu Asn Gly Pro Glu Leu Leu Pro	
825 830 835	
cgc gtg gcc atg ctg cgt ctt ctg act tgg gtg atc ggg acg gcc tct	3197
Arg Val Ala Met Leu Arg Leu Leu Thr Trp Val Ile Gly Thr Gly Ser	
840 845 850	
cct cgc tta cag gtt ctg gct tca gac acc ctg acc acc ctg tgt gcc	3245
Pro Arg Leu Gln Val Leu Ala Ser Asp Thr Leu Thr Thr Leu Cys Ala	
855 860 865 870	
agc agc agt ggt gat gat ggc tgt gcc ttt gca gag cag gag gag gtg	3293
Ser Ser Ser Gly Asp Asp Gly Cys Ala Phe Ala Glu Gln Glu Glu Val	
875 880 885	
gac gtg ctg ctc tgt gcc ttg cag tcc ccg tgt gcc agc gtg cgg gaa	3341
Asp Val Leu Leu Cys Ala Leu Gln Ser Pro Cys Ala Ser Val Arg Glu	
890 895 900	
acc gtg ctc cgg ggg ctg atg gaa ctc cac atg gta ttg cca gca cct	3389
Thr Val Leu Arg Gly Leu Met Glu Leu His Met Val Leu Pro Ala Pro	
905 910 915	
gat act gat gag aag aat ggc ctg aac ctt ctg cgg aga ctc tgg gtg	3437
Asp Thr Asp Glu Lys Asn Gly Leu Asn Leu Leu Arg Arg Leu Trp Val	
920 925 930	
gtc aag ttt gac aag gag gag gag atc cgg aag ctg gct gag agg ctc	3485
Val Lys Phe Asp Lys Glu Glu Glu Ile Arg Lys Leu Ala Glu Arg Leu	
935 940 945 950	
tgg tca atg atg ggc cta gac ctg cag cca gac ctc tgc tcc ttg ctg	3533
Trp Ser Met Met Gly Leu Asp Leu Gln Pro Asp Leu Cys Ser Leu Leu	
955 960 965	

att gac gac gtg atc tat cat gag gcg gct gta agg cag gca ggg gcc Ile Asp Asp Val Ile Tyr His Glu Ala Ala Val Arg Gln Ala Gly Ala 970 975 980	3581
gaa gcc ctc tcc caa gca gtg gca cgt tac cag cgg cag gcg gcg gag Glu Ala Leu Ser Gln Ala Val Ala Arg Tyr Gln Arg Gln Ala Ala Glu 985 990 995	3629
gtt atg ggc agg ctc atg gag att tac cag gaa aag ctc tac cgg ccg Val Met Gly Arg Leu Met Glu Ile Tyr Gln Glu Lys Leu Tyr Arg Pro 1000 1005 1010	3677
ccc cca gtg ctg gat gct ttg gga cga gtt att tca gaa tct cct cca Pro Pro Val Leu Asp Ala Leu Gly Arg Val Ile Ser Glu Ser Pro Pro 1015 1020 1025 1030	3725
gat cag tgg gaa gcc agg tgt ggc ttg gcg ttg gcc ctc aac aag ctc Asp Gln Trp Glu Ala Arg Cys Gly Leu Ala Leu Ala Leu Asn Lys Leu 1035 1040 1045	3773
tcc cag tat ttg gac agc tct cag gtg aag cca ctc ttt cag ttt ttt Ser Gln Tyr Leu Asp Ser Ser Gln Val Lys Pro Leu Phe Gln Phe Phe 1050 1055 1060	3821
gtc cct gat gcc ctc aat gac cga cac cca gat gtc cgg aag tgc atg Val Pro Asp Ala Leu Asn Asp Arg His Pro Asp Val Arg Lys Cys Met 1065 1070 1075	3869
ttg gat gca gcc ctc gca acg ctc aac act cat ggg aag gag aac gtc Leu Asp Ala Ala Leu Ala Thr Leu Asn Thr His Gly Lys Glu Asn Val 1080 1085 1090	3917
aac tcg ctg ttg cca gta ttc gag gag ttc ctg aag aac gcg ccc aat Asn Ser Leu Leu Pro Val Phe Glu Glu Phe Leu Lys Asn Ala Pro Asn 1095 1100 1105 1110	3965
gat gcc agc tac gat gct gtg cga cag agt gtg gtg gtc ctg atg ggc Asp Ala Ser Tyr Asp Ala Val Arg Gln Ser Val Val Val Leu Met Gly 1115 1120 1125	4013
tct ctg gcc aag cac ctg gac aag agt gac ccc aaa gtg aag ccc att Ser Leu Ala Lys His Leu Asp Lys Ser Asp Pro Lys Val Lys Pro Ile 1130 1135 1140	4061
gtt gcc aag ctc atc gct gcc ctc tcc acc ccc tcc cag cag gtc cag Val Ala Lys Leu Ile Ala Ala Leu Ser Thr Pro Ser Gln Gln Val Gln 1145 1150 1155	4109
gag tcc gta gcc agc tgc ttg cca ccc ctc gtg cca gcc atc aag gag Glu Ser Val Ala Ser Cys Leu Pro Pro Leu Val Pro Ala Ile Lys Glu 1160 1165 1170	4157
gat gct gga ggg atg atc cag agg ctt atg cag cag ctg ctg gag tca Asp Ala Gly Gly Met Ile Gln Arg Leu Met Gln Gln Leu Leu Glu Ser 1175 1180 1185 1190	4205
gac aag tac gca gag cgc aaa ggg gcc gcg tat ggc ctg gcg ggc ctg Asp Lys Tyr Ala Glu Arg Lys Gly Ala Ala Tyr Gly Leu Ala Gly Leu 1195 1200 1205	4253
gtg aag ggc ctg ggc atc ctc tcg ctg aag caa cag gag atg atg gcg Val Lys Gly Leu Gly Ile Leu Ser Leu Lys Gln Gln Glu Met Met Ala 1210 1215 1220	4301

gca ctg act gat gcc atc caa gat aag aag aac ttc cgc cgg cga gag Ala Leu Thr Asp Ala Ile Gln Asp Lys Lys Asn Phe Arg Arg Arg Glu 1225 1230 1235	4349
gga gcc ctg ttt gcc ttc gag atg ctg tgc acc atg ctg ggg aaa ctt Gly Ala Leu Phe Ala Phe Glu Met Leu Cys Thr Met Leu Gly Lys Leu 1240 1245 1250	4397
ttt gag ccg tat gtg gtt cac gtg ctg ccc cat ctg ctg ctg tgc ttt Phe Glu Pro Tyr Val Val His Val Leu Pro His Leu Leu Leu Cys Phe 1255 1260 1265 1270	4445
ggg gat gga aac cag tat gtg cgt gag gct gca gat gac tgt gcc aag Gly Asp Gly Asn Gln Tyr Val Arg Glu Ala Ala Asp Asp Cys Ala Lys 1275 1280 1285	4493
gct gtg atg agc aac ttg agt gct cac ggg gtg aag ctg gtg ctg ccc Ala Val Met Ser Asn Leu Ser Ala His Gly Val Lys Leu Val Leu Pro 1290 1295 1300	4541
tcc tta ctg gct gcc ctg gag gag gaa tcg tgg cgg acc aaa gct ggg Ser Leu Leu Ala Ala Leu Glu Glu Glu Ser Trp Arg Thr Lys Ala Gly 1305 1310 1315	4589
tca gtg gag ctt ctt ggg gca atg gcg tac tgt gct cct aag cag ctg Ser Val Glu Leu Leu Gly Ala Met Ala Tyr Cys Ala Pro Lys Gln Leu 1320 1325 1330	4637
tca tcc tgt cta ccc aac att gtg ccc aag ctt acg gag gtg ctg acc Ser Ser Cys Leu Pro Asn Ile Val Pro Lys Leu Thr Glu Val Leu Thr 1335 1340 1345 1350	4685
gac tcc cat gtc aaa gtc cag aag gct gga cag cag gcg ctg agg cag Asp Ser His Val Lys Val Gln Lys Ala Gly Gln Gln Ala Leu Arg Gln 1355 1360 1365	4733
atc ggc tcc gtt atc agg aac ccg gag atc ctg gcc att gct cca gtc Ile Gly Ser Val Ile Arg Asn Pro Glu Ile Leu Ala Ile Ala Pro Val 1370 1375 1380	4781
ctc ctg gat gcc ctg acg gat ccc tcc agg aag acc cag aag tgc ttg Leu Leu Asp Ala Leu Thr Asp Pro Ser Arg Lys Thr Gln Lys Cys Leu 1385 1390 1395	4829
cag acc ctg ctg gac acc aag ttt gtc cac ttc att gat gcc cca tcc Gln Thr Leu Leu Asp Thr Lys Phe Val His Phe Ile Asp Ala Pro Ser 1400 1405 1410	4877
ctg gcc ctg atc atg ccc att gtc cag aga gcc ttc cag gac cgt tcc Leu Ala Leu Ile Met Pro Ile Val Gln Arg Ala Phe Gln Asp Arg Ser 1415 1420 1425 1430	4925
acg gac acg cgg aag atg gca gcc cag att att ggc aac atg tac tcc Thr Asp Thr Arg Lys Met Ala Ala Gln Ile Ile Gly Asn Met Tyr Ser 1435 1440 1445	4973
ctg aca gac cag aag gac ttg gct ccg tac ctg ccc agc gtg acg cct Leu Thr Asp Gln Lys Asp Leu Ala Pro Tyr Leu Pro Ser Val Thr Pro 1450 1455 1460	5021
ggc ctg aaa gca tcg ctt ttg gac cct gtg cct gag gtg cgg acc gta Gly Leu Lys Ala Ser Leu Leu Asp Pro Val Pro Glu Val Arg Thr Val 1465 1470 1475	5069

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Ser Ala Lys Ala Leu Gly Ala Met Val Lys Gly Met Gly Glu Ser Cys	
1480 1485 1490	
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Phe Glu Asp Leu Leu Pro Trp Leu Met Glu Thr Leu Thr Tyr Glu Gln	
1495 1500 1505 1510	
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Ser Ser Val Asp Arg Ser Gly Ala Ala Gln Gly Leu Ala Glu Val Met	
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Ala Gly Leu Gly Val Glu Lys Leu Glu Lys Leu Met Pro Glu Ile Val	
1530 1535 1540	
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Ala Thr Ala Ser Lys Val Asp Ile Ala Pro His Val Arg Asp Gly Tyr	
1545 1550 1555	
att atg atg ttt aac tac ctg ccc atc acc ttt gga gac aag ttt act	5357
Ile Met Met Phe Asn Tyr Leu Pro Ile Thr Phe Gly Asp Lys Phe Thr	
1560 1565 1570	
cct tat gtg ggg ccc atc atc ccc tgt atc ctc aaa gct ctt gct gat	5405
Pro Tyr Val Gly Pro Ile Ile Pro Cys Ile Leu Lys Ala Leu Ala Asp	
1575 1580 1585 1590	
gag aat gag ttt gtg cgt gac acc gcc ctg cgc gcg ggc cag cgg gtt	5453
Glu Asn Glu Phe Val Arg Asp Thr Ala Leu Arg Ala Gly Gln Arg Val	
1595 1600 1605	
atc tcc atg tac gct gag aca gcc atc gcc ctg ctg ctg ccc cag cta	5501
Ile Ser Met Tyr Ala Glu Thr Ala Ile Ala Leu Leu Leu Pro Gln Leu	
1610 1615 1620	
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Glu Gln Gly Leu Phe Asp Asp Leu Trp Arg Ile Arg Phe Ser Ser Val	
1625 1630 1635	
cag ctc ctt ggg gat ctc ctg ttt cac atc tca gga gtc act ggg aag	5597
Gln Leu Leu Gly Asp Leu Leu Phe His Ile Ser Gly Val Thr Gly Lys	
1640 1645 1650	
atg acc aca gaa act gcc tct gag gat gat aac ttt gga act gcc cag	5645
Met Thr Thr Glu Thr Ala Ser Glu Asp Asp Asn Phe Gly Thr Ala Gln	
1655 1660 1665 1670	
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Ser Asn Lys Ala Ile Ile Thr Ala Leu Gly Val Glu Arg Arg Asn Arg	
1675 1680 1685	
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Val Leu Ala Gly Leu Tyr Met Gly Arg Ser Asp Thr Gln Leu Val Val	
1690 1695 1700	
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Arg Gln Ala Ser Leu His Val Trp Lys Ile Val Val Ser Asn Thr Pro	
1705 1710 1715	
cgc acc ttg cgt gag atc cta ccc act ctc ttt ggg ctc ctg ctg ggt	5837
Arg Thr Leu Arg Glu Ile Leu Pro Thr Leu Phe Gly Leu Leu Leu Gly	
1720 1725 1730	

ttc	ctg	gcc	agc	acg	tgt	gca	gat	aag	aga	acg	att	gca	gcg	aga	aca	5885
Phe	Leu	Ala	Ser	Thr	Cys	Ala	Asp	Lys	Arg	Thr	Ile	Ala	Ala	Arg	Thr	
1735					1740					1745					1750	
ttg	gga	gat	ctt	gtg	cgg	aag	tta	ggg	gag	aaa	atc	ctc	ccc	gag	atc	5933
Leu	Gly	Asp	Leu	Val	Arg	Lys	Leu	Gly	Glu	Lys	Ile	Leu	Pro	Glu	Ile	
				1755				1760						1765		
atc	ccc	atc	ctt	gag	gaa	ggc	ctg	agg	tct	cag	aag	agc	gat	gag	agg	5981
Ile	Pro	Ile	Leu	Glu	Glu	Gly	Leu	Arg	Ser	Gln	Lys	Ser	Asp	Glu	Arg	
			1770					1775					1780			
cag	ggt	gtg	tgc	att	ggc	cta	agt	gag	atc	atg	aag	tcc	acc	agc	cgg	6029
Gln	Gly	Val	Cys	Ile	Gly	Leu	Ser	Glu	Ile	Met	Lys	Ser	Thr	Ser	Arg	
	1785						1790					1795				
gat	gcc	gtg	ctg	tat	ttc	tct	gaa	tcc	ctc	gtg	ccc	acg	gca	agg	aag	6077
Asp	Ala	Val	Leu	Tyr	Phe	Ser	Glu	Ser	Leu	Val	Pro	Thr	Ala	Arg	Lys	
	1800					1805					1810					
gct	ttg	tgt	gac	cca	ctg	gag	gag	gtc	aga	gag	gcg	gca	gcc	aag	act	6125
Ala	Leu	Cys	Asp	Pro	Leu	Glu	Glu	Val	Arg	Glu	Ala	Ala	Ala	Lys	Thr	
1815					1820				1825						1830	
ttc	gag	cag	ctg	cat	tcc	acc	atc	ggc	cac	cag	gct	ctg	gag	gac	att	6173
Phe	Glu	Gln	Leu	His	Ser	Thr	Ile	Gly	His	Gln	Ala	Leu	Glu	Asp	Ile	
			1835					1840					1845			
ctc	cca	ttt	tta	cta	aag	cag	ctg	gat	gac	gag	gag	gtg	tca	gag	ttt	6221
Leu	Pro	Phe	Leu	Leu	Lys	Gln	Leu	Asp	Asp	Glu	Glu	Val	Ser	Glu	Phe	
		1850						1855					1860			
gcc	ttg	gat	ggt	ctg	aag	caa	gtc	atg	gct	att	aag	agt	cgt	gtg	gtg	6269
Ala	Leu	Asp	Gly	Leu	Lys	Gln	Val	Met	Ala	Ile	Lys	Ser	Arg	Val	Val	
	1865					1870					1875					
ctg	ccc	tac	ctt	gtg	ccc	aag	ctg	aca	acg	cca	cct	gtc	aac	acc	cgg	6317
Leu	Pro	Tyr	Leu	Val	Pro	Lys	Leu	Thr	Thr	Pro	Pro	Val	Asn	Thr	Arg	
	1880					1885					1890					
gtg	ctg	gct	ttc	ctt	tcg	tca	gtg	gct	ggc	gat	gcc	ctc	acc	cgt	cat	6365
Val	Leu	Ala	Phe	Leu	Ser	Ser	Val	Ala	Gly	Asp	Ala	Leu	Thr	Arg	His	
1895					1900				1905						1910	
ctt	ggc	gtg	atc	ctc	cca	gcg	gtc	atg	ctg	gcc	ctg	aag	gaa	aag	ctt	6413
Leu	Gly	Val	Ile	Leu	Pro	Ala	Val	Met	Leu	Ala	Leu	Lys	Glu	Lys	Leu	
			1915					1920					1925			
ggg	acc	cca	gat	gag	cag	ctg	gag	atg	gcc	aat	tgt	cag	gct	gtg	atc	6461
Gly	Thr	Pro	Asp	Glu	Gln	Leu	Glu	Met	Ala	Asn	Cys	Gln	Ala	Val	Ile	
		1930						1935				1940				

cac ctg cgg agc ctg gtc tcg ggc ctg atc cgc ctc ttc aat gac tcc His Leu Arg Ser Leu Val Ser Gly Leu Ile Arg Leu Phe Asn Asp Ser 1995 2000 2005	6653
agc cct gtg gtt ctg gag gag agc tgg gat gcc cta aat gcc atc act Ser Pro Val Val Leu Glu Glu Ser Trp Asp Ala Leu Asn Ala Ile Thr 2010 2015 2020	6701
aag aag ctg gat gct ggc aac cag ttg gca ctc att gaa gag ctg cac Lys Lys Leu Asp Ala Gly Asn Gln Leu Ala Leu Ile Glu Glu Leu His 2025 2030 2035	6749
aag gaa atc cgg ctc ata ggg aac gag agc aaa ggc gag cat gtg cca Lys Glu Ile Arg Leu Ile Gly Asn Glu Ser Lys Gly Glu His Val Pro 2040 2045 2050	6797
gga ttc tgc ctc ccg aag aag gga gtg acc tcc atc ctt cca gtg ttg Gly Phe Cys Leu Pro Lys Lys Gly Val Thr Ser Ile Leu Pro Val Leu 2055 2060 2065 2070	6845
cgg gaa gga gtc ctg act ggc agc cct gag cag aag gag gag gca gcc Arg Glu Gly Val Leu Thr Gly Ser Pro Glu Gln Lys Glu Glu Ala Ala 2075 2080 2085	6893
aaa gcc tta ggc ttg gta atc cgc ctg acc tcg gct gac gcc ctg agg Lys Ala Leu Gly Leu Val Ile Arg Leu Thr Ser Ala Asp Ala Leu Arg 2090 2095 2100	6941
ccc tcc gtg gtc agc atc act ggc cct ctg atc cgc atc ctg ggg gac Pro Ser Val Val Ser Ile Thr Gly Pro Leu Ile Arg Ile Leu Gly Asp 2105 2110 2115	6989
agg ttc agc tgg aat gtg aag gcg gct ctg ctc gag aca ctc agc ctc Arg Phe Ser Trp Asn Val Lys Ala Ala Leu Leu Glu Thr Leu Ser Leu 2120 2125 2130	7037
ttg ttg gct aag gtt ggg att gcc ctg aag ccc ttc ctg ccc cag ctg Leu Leu Ala Lys Val Gly Ile Ala Leu Lys Pro Phe Leu Pro Gln Leu 2135 2140 2145 2150	7085
cag acc act ttc acc aaa gcc ctg cag gac tcc aac cgg ggg gtg cgc Gln Thr Thr Phe Thr Lys Ala Leu Gln Asp Ser Asn Arg Gly Val Arg 2155 2160 2165	7133
ctg aag gcc gca gat gct ctg ggg aag ctc att tcc atc cac att aag Leu Lys Ala Ala Asp Ala Leu Gly Lys Leu Ile Ser Ile His Ile Lys 2170 2175 2180	7181
gtg gac ccc ctc ttc aca gag ctg ctc aat ggc atc cgc gcc atg gag Val Asp Pro Leu Phe Thr Glu Leu Leu Asn Gly Ile Arg Ala Met Glu 2185 2190 2195	7229
gac cca ggt gtc agg gac acc atg ctg cag gcc ctg agg ttt gtg att Asp Pro Gly Val Arg Asp Thr Met Leu Gln Ala Leu Arg Phe Val Ile 2200 2205 2210	7277
cag gga gca ggg gcc aaa gtg gat gcc gtc atc cgg aaa aac atc gtc Gln Gly Ala Gly Ala Lys Val Asp Ala Val Ile Arg Lys Asn Ile Val 2215 2220 2225 2230	7325
tca ctc ctg ctg agc atg ctg gga cac gat gag gac aac act cgc atc Ser Leu Leu Leu Ser Met Leu Gly His Asp Glu Asp Asn Thr Arg Ile 2235 2240 2245	7373

tcc tca gcc ggg tgc cta ggg gaa ctg tgt gcc ttt ttg act gaa gag Ser Ser Ala Gly Cys Leu Gly Glu Leu Cys Ala Phe Leu Thr Glu Glu 2250 2255 2260	7421
gag ctt agt gcc gtt cta cag cag tgc ttg ctg gcg gac gtg tcc ggc Glu Leu Ser Ala Val Leu Gln Gln Cys Leu Leu Ala Asp Val Ser Gly 2265 2270 2275	7469
att gac tgg atg gtt cgg cac ggg cgg agc ctg gca ctt tcc gtg gct Ile Asp Trp Met Val Arg His Gly Arg Ser Leu Ala Leu Ser Val Ala 2280 2285 2290	7517
gtg aat gtg gct cct ggc aga ctt tgt gcc ggc aga tat agc agt gat Val Asn Val Ala Pro Gly Arg Leu Cys Ala Gly Arg Tyr Ser Ser Asp 2295 2300 2305 2310	7565
gtt cag gaa atg atc ctg agc agt gcc acg gcg gac agg atc ccc att Val Gln Glu Met Ile Leu Ser Ser Ala Thr Ala Asp Arg Ile Pro Ile 2315 2320 2325	7613
gcg gtg agc ggg gtc cgg ggc atg ggc ttt ctc atg aga cac cac atc Ala Val Ser Gly Val Arg Gly Met Gly Phe Leu Met Arg His His Ile 2330 2335 2340	7661
gag aca ggc gga ggg cag ttg ccg gcc aaa ctt tcc agc ctg ttc gtt Glu Thr Gly Gly Gly Gln Leu Pro Ala Lys Leu Ser Ser Leu Phe Val 2345 2350 2355	7709
aag tgt ctg cag aac cca tcc agc gac atc agg ctg gtg gct gag aag Lys Cys Leu Gln Asn Pro Ser Ser Asp Ile Arg Leu Val Ala Glu Lys 2360 2365 2370	7757
atg atc tgg tgg gca aat aag gac cca ctg cct ccc ctg gac ccc cag Met Ile Trp Trp Ala Asn Lys Asp Pro Leu Pro Pro Leu Asp Pro Gln 2375 2380 2385 2390	7805
gcc atc aag ccc atc ctg aag gct ctt ctt gac aac acc aag gat aag Ala Ile Lys Pro Ile Leu Lys Ala Leu Leu Asp Asn Thr Lys Asp Lys 2395 2400 2405	7853
aac acc gtg gtc agg gcc tac agc gac cag gca att gtc aac ctc ctc Asn Thr Val Val Arg Ala Tyr Ser Asp Gln Ala Ile Val Asn Leu Leu 2410 2415 2420	7901
aag atg cgg cag ggt gaa gag gtg ttt cag tcc ctc tcc aag atc ctg Lys Met Arg Gln Gly Glu Glu Val Phe Gln Ser Leu Ser Lys Ile Leu 2425 2430 2435	7949
gat gtg gcc agt ttg gag gtg ctg aac gag gtt aac cga agg tcc ctg Asp Val Ala Ser Leu Glu Val Leu Asn Glu Val Asn Arg Arg Ser Leu 2440 2445 2450	7997
aag aag ctg gcc agc cag gcc gac tcc acg gag cag gtg gac gac acc Lys Lys Leu Ala Ser Gln Ala Asp Ser Thr Glu Gln Val Asp Asp Thr 2455 2460 2465 2470	8045
atc ctg aca tga gag gcctgggcca gcagcagcat tgccgctcca catctttgct Ile Leu Thr *	8100
caatgttttc atttttgaaa atacatttgt tccaatgggg agcttggaag atggcgttcc	8160
cagaaagtat tttaatatca atagaccaca gccaaagcct taaatcaaac ccacacacaa	8220


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ctgaaaattg cctcctccat ctctcacctt ttcctgtgga gaagagaagg aaaagcacac 8280
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<210> 590
<211> 2230
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (85) .. (1152)

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aagaatgccg tgtttcctgg atct atg gag gga atc cca gga ttt cct gga 111
Met Glu Gly Ile Pro Gly Phe Pro Gly
1 5

aac cga gga tta atg ggc caa aag gga gaa att ggg cct cca gga cag 159
Asn Arg Gly Leu Met Gly Gln Lys Gly Glu Ile Gly Pro Pro Gly Gln
10 15 20 25

caa gga aaa aaa gga gcc cca ggg atg cct ggt tta atg gga agc aat 207
Gln Gly Lys Lys Gly Ala Pro Gly Met Pro Gly Leu Met Gly Ser Asn
30 35 40

ggc tca cca ggc cag cct gga aca ccg gga tct aag gga agc aaa ggt 255
Gly Ser Pro Gly Gln Pro Gly Thr Pro Gly Ser Lys Gly Ser Lys Gly
45 50 55

gaa cct gga att caa ggg atg cct ggg gct tct ggg ctc aag gga gaa 303
Glu Pro Gly Ile Gln Gly Met Pro Gly Ala Ser Gly Leu Lys Gly Glu
60 65 70

cca gga gca acg ggt tcc cca gga gaa cca gga tac atg ggt tta ccc 351
Pro Gly Ala Thr Gly Ser Pro Gly Glu Pro Gly Tyr Met Gly Leu Pro
75 80 85

ggg att caa gga aaa aag ggg gac aaa gga aat caa ggt gaa aaa ggt 399
Gly Ile Gln Gly Lys Lys Gly Asp Lys Gly Asn Gln Gly Glu Lys Gly
90 95 100 105

att cag ggt caa aag gga gaa aat gga aga cag gga att cca ggg caa 447
Ile Gln Gly Gln Lys Gly Glu Asn Gly Arg Gln Gly Ile Pro Gly Gln
110 115 120

cag gga att caa ggc cat cat ggt gca aaa gga gag aga ggt gaa aag 495

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Gln Gly Ile	Gln Gly His His	Gly Ala Lys	Gly Glu Arg	Gly Glu Lys		
125		130		135		
gga gaa cct	ggt gtc cga ggt	gcc att gga tca	aaa gga gaa tct	ggg	543	
Gly Glu Pro	Gly Val Arg Gly	Ala Ile Gly Ser	Lys Gly Glu Ser	Gly		
140		145		150		
gtg gat ggc	ttg atg ggg ccc	gca ggt cct aag	ggg caa cct ggg	gat	591	
Val Asp Gly	Leu Met Gly Pro	Ala Gly Pro Lys	Gly Gln Pro Gly	Asp		
155		160		165		
cca ggt cct	cag gga ccc cca	ggt ttg gat ggg	aag ccc gga aga	gag	639	
Pro Gly Pro	Gln Gly Pro Pro	Gly Leu Asp Gly	Lys Pro Gly Arg	Glu		
170		175		185		
ttt tca gaa	caa ttt att cga	caa gtt tgc aca	gat gta ata aga	gcc	687	
Phe Ser Glu	Gln Phe Ile Arg	Gln Val Cys Thr	Asp Val Ile Arg	Ala		
	190		195	200		
cag cta cca	gtc tta ctt cag	agt gga aga att	aga aat tgt gat	cat	735	
Gln Leu Pro	Val Leu Leu Gln	Ser Gly Arg Ile	Arg Asn Cys Asp	His		
	205		210	215		
tgc ctg tcc	caa cat ggc tcc	ccg ggt att cct	ggg cca cct ggt	ccg	783	
Cys Leu Ser	Gln His Gly Ser	Pro Gly Ile Pro	Gly Pro Pro Gly	Pro		
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ata ggc cca	gag ggt ccc aga	gga tta cct ggt	ttg cca gga aga	gat	831	
Ile Gly Pro	Glu Gly Pro Arg	Gly Leu Pro Gly	Leu Pro Gly Arg	Asp		
235		240		245		
ggt gtt cct	gga tta gtg ggt	gtc cct gga cgt	cca ggt gtc aga	gga	879	
Gly Val Pro	Gly Leu Val Gly	Val Pro Gly Arg	Pro Gly Val Arg	Gly		
250		255		265		
tta aaa ggc	cta cca gga aga	aat ggg gaa aaa	ggg agc caa ggg	ttt	927	
Leu Lys Gly	Leu Pro Gly Arg	Asn Gly Glu Lys	Gly Ser Gln Gly	Phe		
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ggg tat cct	gga gaa caa ggt	cct cct ggt ccc	cca ggt cca gag	ggc	975	
Gly Tyr Pro	Gly Glu Gln Gly	Pro Pro Gly Pro	Pro Gly Pro Glu	Gly		
	285		290	295		
cct cct gga	ata agc aaa gaa	ggt cct cca gga	gac cca ggt ctc	cct	1023	
Pro Pro Gly	Ile Ser Lys Glu	Gly Pro Pro Gly	Asp Pro Gly Leu	Pro		
300		305		310		
ggc aaa gat	gga gac cat gga	aaa cct gga atc	caa ggg caa cca	ggc	1071	
Gly Lys Asp	Gly Asp His Gly	Lys Pro Gly Ile	Gln Gly Gln Pro	Gly		
315		320		325		
ccc cca ggc	atc tgc gac cca	tca cta tgt ttt	agt gta att gcc	aga	1119	
Pro Pro Gly	Ile Cys Asp Pro	Ser Leu Cys Phe	Ser Val Ile Ala	Arg		
330		335		345		
aga gat ccg	ttc aga aaa gga	cca aac tat tag	tgtctgat gcctcattca		1170	
Arg Asp Pro	Phe Arg Lys Gly	Pro Asn Tyr *				
	350		355			
gcagcctagg	catggtgctt	tttctgtggt	cttttgcac	tcaggaagat	aaccaacagt	1230
aatcccttga	aaagaaactt	aagtacctcg	gcgtttttat	tttttttttc	ttatggaaaa	1290
aaatataaaa	gatcacatat	actgatttta	aaggctcctc	agtcatttgg	agcccttgga	1350

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ttagcagcat taattaaatc tcaagggttt cttgttaaagt ccatttatgt taatcaaagt 1410
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cacattcagc ctccatgcag tagagatttg agtttaattt catgtccatg tgactttcat 1530
gtttcctatc tcatagctca tgctactaca taagccaaaa catgtatctc atcattggaa 1590
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tattttatac ttgttgatta atcggaatgt ttgttgtatg ccttcatttt ccatttcact 1950
tatatgtgta tgtccatata tgtaattttt cattgtagca aagctaattg aaataaagct 2010
aatgctctag ttgaaagaaa aggaaaactc ctgaaatcct agaatgtctt gttattttta 2070
gctgactgta aatatttatg aacagtcttt gtgtattgtg cttaatgctt ttgtaagaaa 2130
cagaatttga aatatttcat ccttgtcatg ctcaaaattt tgttacatgc ttgttattca 2190
gagtataata aagttttgta caggcctgaa aaaaaaaaaa 2230

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<210> 591
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<213> Homo sapiens

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<222> (266) .. (706)

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ccctcccctt ggaaaggcac caaaagccag cctttggaag ggctgggtgga ctgtgccctt 180
ctttcccttc agagaaccag tgtccctgtg actccacca ctcactctggc caccgttgcc 240
ctgacctgcc aggagcctgg agaag atg aag gca tcc gtg gtt ctc tcc ctc 292
Met Lys Ala Ser Val Val Leu Ser Leu
1 5

ctt ggc tac ctg gtg gtt cca agt ggt gct tac atc ttg ggg cgt tgc 340
Leu Gly Tyr Leu Val Val Pro Ser Gly Ala Tyr Ile Leu Gly Arg Cys
10 15 20 25

aca gtg gct aag aaa ctc cac gat gga ggc ctg gat tat ttt gag ggc 388
Thr Val Ala Lys Lys Leu His Asp Gly Gly Leu Asp Tyr Phe Glu Gly
30 35 40

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tat agc ctt gag aac tgg gtg tgc ctg gcc tac ttc gag agc aag ttc 436
Tyr Ser Leu Glu Asn Trp Val Cys Leu Ala Tyr Phe Glu Ser Lys Phe
45 50 55

aac ccc atg gcc atc tac gag aac aca cgt gag ggc tac act ggc ttt 484
Asn Pro Met Ala Ile Tyr Glu Asn Thr Arg Glu Gly Tyr Thr Gly Phe
60 65 70

ggc ctc ttt cag atg cgt ggc agt gac tgg tgt ggc gac cat ggc agg 532
Gly Leu Phe Gln Met Arg Gly Ser Asp Trp Cys Gly Asp His Gly Arg
75 80 85

aac cgc tgc cat atg tca tgt tcc gct tta ctg aat cct aat tta gag 580
Asn Arg Cys His Met Ser Cys Ser Ala Leu Leu Asn Pro Asn Leu Glu
90 95 100 105

aag aca att aaa tgt gcc aag acc att gta aaa gga aaa gaa ggg atg 628
Lys Thr Ile Lys Cys Ala Lys Thr Ile Val Lys Gly Lys Glu Gly Met
110 115 120

gga gca tgg ccc acc tgg tcc cgg tac tgc cag tac tcc gat acc ctg 676
Gly Ala Trp Pro Thr Trp Ser Arg Tyr Cys Gln Tyr Ser Asp Thr Leu
125 130 135

gca cgg tgg ctg gat ggt tgc aag ctg tag c cgccctgcatg gccctgcag 727
Ala Arg Trp Leu Asp Gly Cys Lys Leu *
140 145

cactcaccag ttgcatcttg tgaatgaagg tgcttttctg cttgctgctt cagtcaatcc 787

ttttgatgat ctcaccactt taagagttcc agatggaaaa agacaaaagt ttgcttcac 847

cggggatgca ggatgcagaa taaaccaaac tagttactca aaaaaaaaaa 897

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<211> 2817
<212> DNA
<213> Homo sapiens

<220>
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<222> (96)..(1232)

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tggtcagtg gcttctgcgg gcttcgagga gcggg atg ttg cgg gct ggg tgg 113
Met Leu Arg Ala Gly Trp
1 5

ctc cgg ggc gcg gcg gcg ctg gcg ctg ctg ctg gcg gcc cga gtg gtg 161
Leu Arg Gly Ala Ala Ala Leu Ala Leu Leu Ala Ala Arg Val Val
10 15 20

gcg gcg ttc gag ccc atc acc gtg ggc cta gcc atc ggg gcc gcg tcg 209
Ala Ala Phe Glu Pro Ile Thr Val Gly Leu Ala Ile Gly Ala Ala Ser
25 30 35

gcc atc acc ggc tac ctg tcc tac aat gac atc tac tgc cgc ttc gcc 257
Ala Ile Thr Gly Tyr Leu Ser Tyr Asn Asp Ile Tyr Cys Arg Phe Ala
40 45 50

gag tgc tgc cgc gag gag cgg ccg ctc aac gct tcg gct ctc aag ctg Glu Cys Cys Arg Glu Glu Arg Pro Leu Asn Ala Ser Ala Leu Lys Leu 55 60 65 70	305
gat ttg gag gag aag ctg ttt gga cag cat cta gcc acg gaa gtg att Asp Leu Glu Glu Lys Leu Phe Gly Gln His Leu Ala Thr Glu Val Ile 75 80 85	353
ttc aag gcg ctg act ggc ttc agg aac aac aaa aat ccc aag aaa cca Phe Lys Ala Leu Thr Gly Phe Arg Asn Asn Lys Asn Pro Lys Lys Pro 90 95 100	401
ctg acc ctt tcc tta cac ggc tgg gct ggc aca gcc aag aat ttt gtc Leu Thr Leu Ser Leu His Gly Trp Ala Gly Thr Gly Lys Asn Phe Val 105 110 115	449
agt caa att gtg gct gaa aat ctt cac cca aaa ggt ctg aag agt aac Ser Gln Ile Val Ala Glu Asn Leu His Pro Lys Gly Leu Lys Ser Asn 120 125 130	497
ttt gtc cac ctg ttt gta tcg act ctg cac ttc cct cat gag cag aag Phe Val His Leu Phe Val Ser Thr Leu His Phe Pro His Glu Gln Lys 135 140 145 150	545
ata aaa ctg tac ccg gac cag tta cag aag tgg atc cgc ggt aat gtg Ile Lys Leu Tyr Pro Asp Gln Leu Gln Lys Trp Ile Arg Gly Asn Val 155 160 165	593
agt gca tgt gcg aac tct gtt ttc ata ttt gac gag atg gat aaa ttg Ser Ala Cys Ala Asn Ser Val Phe Ile Phe Asp Glu Met Asp Lys Leu 170 175 180	641
cac ccc ggg atc att gac gca atc aag ccg ttt cta gac tac tac gag His Pro Gly Ile Ile Asp Ala Ile Lys Pro Phe Leu Asp Tyr Tyr Glu 185 190 195	689
cag gtt gac gga gtg tat tac cgc aaa gcc atc ttc atc ttt ctc agc Gln Val Asp Gly Val Tyr Tyr Arg Lys Ala Ile Phe Ile Phe Leu Ser 200 205 210	737
aat gca ggc ggg gac ctt ata act aag acg gct ctt gac ttt tgg cgg Asn Ala Gly Gly Asp Leu Ile Thr Lys Thr Ala Leu Asp Phe Trp Arg 215 220 225 230	785
gcc gga aga aag agg gaa gac att cag ctg aag gac ctg gaa cct gta Ala Gly Arg Lys Arg Glu Asp Ile Gln Leu Lys Asp Leu Glu Pro Val 235 240 245	833
ctg tct gtc gga gtc ttc aat aat aaa cac agt ggc ctg tgg cac agt Leu Ser Val Gly Val Phe Asn Asn Lys His Ser Gly Leu Trp His Ser 250 255 260	881
gga ctg atc gac aaa aac ctc att gat tac ttt atc ccc ttc ctg cct Gly Leu Ile Asp Lys Asn Leu Ile Asp Tyr Phe Ile Pro Phe Leu Pro 265 270 275	929
ttg gag tac aga cat gtg aaa atg tgt gtg atg gcc gag atg agg gcc Leu Glu Tyr Arg His Val Lys Met Cys Val Met Ala Glu Met Arg Ala 280 285 290	977
cgt ggt tct gcc ata gat gaa gac att gtc aca aga gtg gca gag gaa Arg Gly Ser Ala Ile Asp Glu Asp Ile Val Thr Arg Val Ala Glu Glu 295 300 305 310	1025

atg acg ttt ttt ccc cag aga cga gaa aat cta ctc aga caa ggg ctg	1073
Met Thr Phe Phe Pro Gln Arg Arg Glu Asn Leu Leu Arg Gln Gly Leu	
315 320 325	
caa gac tgt gca gtc gcg gct gga ttt cca ctg agc tcc tat cca gat	1121
Gln Asp Cys Ala Val Ala Ala Gly Phe Pro Leu Ser Ser Tyr Pro Asp	
330 335 340	
ggg gta gga gac agc tgg gag gct ccg cac gcc aga ggc ctt gcc ttt	1169
Gly Val Gly Asp Ser Trp Glu Ala Pro His Ala Arg Gly Leu Ala Phe	
345 350 355	
cag aag aac cct gaa gac cgc ttt ggg gtt ttg cct gtt tgc acc tta	1217
Gln Lys Asn Pro Glu Asp Arg Phe Gly Val Leu Pro Val Cys Thr Leu	
360 365 370	
gac ttt tgg gta tag aatctttttt ttgagaagag gtctcactcc gtcaccaag	1272
Asp Phe Trp Val *	
375	
ctggagtgca gtggtgcaat cctcaactca ctgcaacctc cgctcccggg ttgagtgatt	1332
ctcatgcctc agcctcccga gtagctggga ttacaggcat gagccactgt gccagctgg	1392
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cggaggatgt ggccgtgccc gccgagcact cttgatctga gctgacctgt gtgtgtgtgt	1872
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gactgaacaa gtcagcttga tgatcttaaa tgatggaagt ataggacgtt gcttatttta	2292
aaacaaggga aggacacaaa atggaatgac tgcttagtcc tttctcagat actcttaaaa	2352
caatttttta ttgttaaatt tgttgtaata catggtcaca accgtggatc aaacaaggtc	2412
agtctaaagt ggcaggctct aggtgtgacc tgataccacc accctttgtg gcagcaccgg	2472
gctggactgc cctgatccct gggacgtgag acttagcttc cagccagtgt gaatcattgt	2532
atctgtctca taatcacagc acagctgcag acacaacaac gtgcagcatt ttttacataa	2592

aaatatggta gaattaattt atgacatgga aatgccttac gtggtatcac acttagtctt 2652
 gaaaaaaca ccaaggtgac gtttaaaatt tttagtacat atcctcaa at tggagctaag 2712
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 <212> DNA
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<220>
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 <222> (88) .. (351)

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 Met Ala Gly Ala Ser Leu Gly Ala
 1 5
 cgc ttc tac cgg cag atc aaa aga cat ccg ggg atc atc ccg atg atc 159
 Arg Phe Tyr Arg Gln Ile Lys Arg His Pro Gly Ile Ile Pro Met Ile
 10 15 20
 ggc tta atc tgc ctg ggc atg ggc agc gct gcg ctt tac ttg ctg cga 207
 Gly Leu Ile Cys Leu Gly Met Gly Ser Ala Ala Leu Tyr Leu Leu Arg
 25 30 35 40
 ctc gcc ctt cgc agc ccc gac gtc tgc tgg gac aga aag aac aac ccg 255
 Leu Ala Leu Arg Ser Pro Asp Val Cys Trp Asp Arg Lys Asn Asn Pro
 45 50 55
 gag ccc tgg aac cgc ctg agc ccc aat gac caa tac aag ttc ctt gca 303
 Glu Pro Trp Asn Arg Leu Ser Pro Asn Asp Gln Tyr Lys Phe Leu Ala
 60 65 70
 gtt tcc act gac tat aag aag ctg aag aag gac cgg cca gac ttc taa 351
 Val Ser Thr Asp Tyr Lys Lys Leu Lys Lys Asp Arg Pro Asp Phe *
 75 80 85
 gccaggctgg gctgccagt ccacgcaagc cacagccagc cagcccatcc acttcttcca 411
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 ggccgggttc ccacgcagag gggaggctgc tccacccta ctctctccc ttgctcccag 531
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 caccagcagg ggtccaccaa gagcccagac cagccctctt gccctctac ccgggcctcg 651
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 aaaa 1015

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 <211> 636
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (88)..(516)

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 Met Arg Arg Leu Leu Leu Val Thr
 1 5
 agc ctg gtg gtt gtg ctg ctg tgg gag gca ggt gca gtc cca gca ccc 159
 Ser Leu Val Val Val Leu Leu Trp Glu Ala Gly Ala Val Pro Ala Pro
 10 15 20
 aag gtc cct atc aag atg caa gtc aaa cac tgg ccc tca gag cag gac 207
 Lys Val Pro Ile Lys Met Gln Val Lys His Trp Pro Ser Glu Gln Asp
 25 30 35 40
 cca gag aag gcc tgg ggc gcc cgt gtg gtg gag cct ccg gag aag gac 255
 Pro Glu Lys Ala Trp Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp
 45 50 55
 gac cag ctg gtg gtg ctg ttc cct gtc cag aag ccg aaa ctc ttg acc 303
 Asp Gln Leu Val Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr
 60 65 70
 acc gag gag aag cca cga ggc acc aag gcc tgg atg gag acc gag gac 351
 Thr Glu Glu Lys Pro Arg Gly Thr Lys Ala Trp Met Glu Thr Glu Asp
 75 80 85
 acc ctg ggc cgt gtc ctg agt ccc gag ccc gac cat gac agc ctg tac 399
 Thr Leu Gly Arg Val Leu Ser Pro Glu Pro Asp His Asp Ser Leu Tyr
 90 95 100
 cac cct ccg cct gag gag gac cag ggc gag gag agg ccc ccg ttg tgg 447
 His Pro Pro Pro Glu Glu Asp Gln Gly Glu Glu Arg Pro Arg Leu Trp
 105 110 115 120
 gtg atg cca aat cac cag gtg ctc ctg gga ccg gag gaa gac caa gac 495
 Val Met Pro Asn His Gln Val Leu Leu Gly Pro Glu Glu Asp Gln Asp
 125 130 135
 cac atc tac cac ccc cag tag gg ctccaggggc catcactgcc cccgccctgt 548
 His Ile Tyr His Pro Gln *
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                                   Met Arg Arg Leu Leu Leu Val Thr
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agc ctg gtg gtt gtg ctg ctg tgg gag gca ggt gca gtc cca gca ccc      159
Ser Leu Val Val Val Leu Leu Trp Glu Ala Gly Ala Val Pro Ala Pro
      10                               15                               20

aag gtc cct atc aag atg caa gtc aaa cac tgg ccc tca gag cag gac      207
Lys Val Pro Ile Lys Met Gln Val Lys His Trp Pro Ser Glu Gln Asp
      25                               30                               35                               40

cca gag aag gcc tgg ggc gcc cgt gtg gtg gag cct ccg gag aag gac      255
Pro Glu Lys Ala Trp Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp
                                   45                               50                               55

gac cag ctg gtg gtg ctg ttc cct gtc cag aag ccg aaa ctc ttg acc      303
Asp Gln Leu Val Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr
                                   60                               65                               70

acc gag gag aag cca cga ggt cag ggc agg ggc ccc atc ctt cca ggc      351
Thr Glu Glu Lys Pro Arg Gly Gln Gly Arg Gly Pro Ile Leu Pro Gly
      75                               80                               85

acc aag gcc tgg atg gag acc gag gac acc ctg ggc cgt gtc ctg agt      399
Thr Lys Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg Val Leu Ser
      90                               95                               100

ccc gag ccc gac cat gac agc ctg tac cac cct ccg cct gag gag gac      447
Pro Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Pro Glu Glu Asp
      105                               110                               115                               120

cag ggc gag gag agg ccc cgg ttg tgg gtg atg cca aat cac cag gtg      495
Gln Gly Glu Glu Arg Pro Arg Leu Trp Val Met Pro Asn His Gln Val
                                   125                               130                               135

ctc ctg gga ccg gag gaa gac caa gac cac atc tac cac ccc cag tag      543
Leu Leu Gly Pro Glu Glu Asp Gln Asp His Ile Tyr His Pro Gln *
                                   140                               145                               150

ggctccaggg gccatcactg ccccgccct gtcccaaggc ccaggctgtt gggactggga      603
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 Ser Val Asp Gly Leu Thr Leu Ser Pro Asp Pro Glu Glu Arg Pro Gly
 15 20 25

gcg gag ggc gcc ccg ctg ctg ccg cca ccg ctg cca ccg ccc tcg cca 144
 Ala Glu Gly Ala Pro Leu Leu Pro Pro Pro Leu Pro Pro Pro Ser Pro
 30 35 40

cct gga tcc ggt cgc ggc ccg ggc gcc tca ggg gag cag ccc gag ccc 192
 Pro Gly Ser Gly Arg Gly Pro Gly Ala Ser Gly Glu Gln Pro Glu Pro
 45 50 55 60

ggg gag gcg gcg gct ggg ggc gcg gcg gag gag gcg cgg cgg ctg gag 240
 Gly Glu Ala Ala Ala Gly Gly Ala Ala Glu Glu Ala Arg Arg Leu Glu
 65 70 75

cag cgc tgg ggt ttc ggc ctg gag gag ttg tac ggc ctg gca ctg cgc 288
 Gln Arg Trp Gly Phe Gly Leu Glu Glu Leu Tyr Gly Leu Ala Leu Arg
 80 85 90

ttc ttc aaa gaa aaa gat ggc aaa gca ttt cat cca act tat gaa gaa 336
 Phe Phe Lys Glu Lys Asp Gly Lys Ala Phe His Pro Thr Tyr Glu Glu
 95 100 105

aaa ttg aag ctt gtg gca ctg cat aag caa gtt ctt atg ggc cca tat 384
 Lys Leu Lys Leu Val Ala Leu His Lys Gln Val Leu Met Gly Pro Tyr
 110 115 120

aat cca gac act tgt cct gag gtt gga ttc ttt gat gtg ttg ggg aat 432
 Asn Pro Asp Thr Cys Pro Glu Val Gly Phe Phe Asp Val Leu Gly Asn
 125 130 135 140

gac agg agg aga gaa tgg gca gcc ctg gga aac atg tct aaa gag gat 480
 Asp Arg Arg Arg Glu Trp Ala Ala Leu Gly Asn Met Ser Lys Glu Asp
 145 150 155

gcc atg gtg gag ttt gtc aag ctc tta aat agg tgt tgc cat ctc ttt 528
 Ala Met Val Glu Phe Val Lys Leu Leu Asn Arg Cys Cys His Leu Phe
 160 165 170

tca aca tat gtt gcg tcc cac aaa ata gag aag gaa gag caa gac aaa 576
 Ser Thr Tyr Val Ala Ser His Lys Ile Glu Lys Glu Glu Gln Asp Lys
 175 180 185

aaa agg aag gag gaa gag gag cga agg cat cgt gaa gag gaa gaa aga 624
 Lys Arg Lys Glu Glu Glu Glu Arg Arg His Arg Glu Glu Glu Glu Arg
 190 195 200

gaa cgt ctg caa aag gag gaa gag aaa cgt agg aga gaa gaa gag gaa 672

Glu Arg Leu Gln Lys Glu Glu Glu Lys Arg Arg Arg Glu Glu Glu Glu	
205 210 215 220	
agg ctt cga cgg gag gaa gag gaa agg aga cgg ata gaa gaa gaa agg	720
Arg Leu Arg Arg Glu Glu Glu Glu Arg Arg Arg Ile Glu Glu Glu Arg	
225 230 235	
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Leu Arg Leu Glu Gln Gln Lys Gln Gln Ile Met Ala Ala Leu Asn Ser	
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Gln Thr Ala Val Gln Phe Gln Gln Tyr Ala Ala Gln Gln Tyr Pro Gly	
255 260 265	
aac tac gaa cag cag caa att ctc atc cgc cag ttg cag gag caa cac	864
Asn Tyr Glu Gln Gln Gln Ile Leu Ile Arg Gln Leu Gln Glu Gln His	
270 275 280	
tat cag cag tac atg cag cag ttg tat caa gtc cag ctt gca cag caa	912
Tyr Gln Gln Tyr Met Gln Gln Leu Tyr Gln Val Gln Leu Ala Gln Gln	
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Gln Ala Ala Leu Gln Lys Gln Gln Glu Val Val Val Ala Gly Ser Ser	
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Leu Pro Thr Ser Ser Lys Val Asn Ala Thr Val Pro Ser Asn Met Met	
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Ser Val Asn Gly Gln Ala Lys Thr His Thr Asp Ser Ser Glu Lys Glu	
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Ser Leu Pro Val Ile Ala Ala Pro Ser Met Trp Thr Arg Pro Gln Ile	
365 370 375 380	
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Lys Asp Phe Lys Glu Lys Ile Gln Gln Asp Ala Asp Ser Val Ile Thr	
385 390 395	
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Val Gly Arg Gly Glu Val Val Thr Val Arg Val Pro Thr His Glu Glu	
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gga tca tat ctc ttt tgg gaa ttt gcc aca gac aat tat gac att ggg	1296
Gly Ser Tyr Leu Phe Trp Glu Phe Ala Thr Asp Asn Tyr Asp Ile Gly	
415 420 425	
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Phe Gly Val Tyr Phe Glu Trp Thr Asp Ser Pro Asn Thr Ala Val Ser	
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Val His Val Ser Glu Ser Ser Asp Asp Asp Glu Glu Glu Glu Glu Asn	
445 450 455 460	
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Ile Gly Cys	Glu Glu Lys	Ala Lys Lys	Asn Ala Asn	Lys Pro	Leu Leu	
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gat gag att	gtg cct gtg	tac cga cgg	gac tgt cat	gag gag	gtg tat	1488
Asp Glu Ile	Val Pro Val	Tyr Arg Arg	Asp Cys His	Glu Glu	Val Tyr	
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gct ggc agc	cat caa tat	cca ggg aga	gga gtc tat	ctc ctc	aag ttt	1536
Ala Gly Ser	His Gln Tyr	Pro Gly Arg	Gly Val Tyr	Leu Leu	Lys Phe	
	495		500		505	
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Asp Asn Ser	Tyr Ser Leu	Trp Arg Ser	Lys Ser Val	Tyr Tyr	Arg Val	
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Tyr Tyr Thr	Arg *					
	525					
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ttttcctact tacattgtaa atggggccaca      atg gaa gag ctc gaa aag gat 171
                                         Met Glu Glu Leu Glu Lys Asp
                                         1           5

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Pro Arg Ile Ala Gln Lys Ile Lys Arg Phe Arg Asn Lys Gln Ala Gln
      10           15           20

atg aag cac att ttt acg gag gat tca gtg agg gac ttt gca aaa cct 267
Met Lys His Ile Phe Thr Glu Asp Ser Val Arg Asp Phe Ala Lys Pro
      25           30           35

gag ggc agc tgc aag agg act gtc atg gtg gga atg ggg cat agg tgg 315
Glu Gly Ser Cys Lys Arg Thr Val Met Val Gly Met Gly His Arg Trp
      40           45           50           55

aga gcg gac tgc aca atg cct gat gaa gac ttg ttc aat cca gac tat 363
Arg Ala Asp Cys Thr Met Pro Asp Glu Asp Leu Phe Asn Pro Asp Tyr
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gta gaa gtt gat cgc atc ttg gag gtg gcc cac acc aag gat gca gaa 411
Val Glu Val Asp Arg Ile Leu Glu Val Ala His Thr Lys Asp Ala Glu
      75           80           85

aca ggg gag gag gta aca cat tac ctg gtg aag tgg tgc tca cta cca 459
Thr Gly Glu Glu Val Thr His Tyr Leu Val Lys Trp Cys Ser Leu Pro
      90           95           100

tat gaa gaa agc acg tgg gag cta gag gaa gat gta gat cct gca aaa 507
Tyr Glu Glu Ser Thr Trp Glu Leu Glu Glu Asp Val Asp Pro Ala Lys
      105           110           115

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140 145 150	
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Tyr Lys Asn Ser Asn Gln Leu Arg Glu Tyr Gln Leu Glu Gly Met Asn	
155 160 165	
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Trp Leu Leu Phe Asn Trp Tyr Asn Arg Lys Asn Cys Ile Leu Ala Asp	
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gag atg ggc cta ggg aaa acc atc cag tcc atc aca ttc ctt tca gaa	747
Glu Met Gly Leu Gly Lys Thr Ile Gln Ser Ile Thr Phe Leu Ser Glu	
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Ile Phe Leu Arg Gly Ile His Gly Pro Phe Leu Ile Ile Ala Pro Leu	
200 205 210 215	
tcc acc atc act aac tgg gag cgg gag ttc cgg aca tgg aca gag atg	843
Ser Thr Ile Thr Asn Trp Glu Arg Glu Phe Arg Thr Trp Thr Glu Met	
220 225 230	
aat gcc att gtg tac cac ggc agc cag atc agc agg cag atg atc cag	891
Asn Ala Ile Val Tyr His Gly Ser Gln Ile Ser Arg Gln Met Ile Gln	
235 240 245	
cag tat gaa atg gtg tac aga gac gcc cag gga aac ccc ctt tca gga	939
Gln Tyr Glu Met Val Tyr Arg Asp Ala Gln Gly Asn Pro Leu Ser Gly	
250 255 260	
gtc ttc aag ttc cac gtc gtc atc aca aca ttt gaa atg atc cta gca	987
Val Phe Lys Phe His Val Val Ile Thr Thr Phe Glu Met Ile Leu Ala	
265 270 275	
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Asp Cys Pro Glu Leu Lys Lys Ile His Trp Ser Cys Val Ile Ile Asp	
280 285 290 295	
gaa gcc cac aga ctg aag aat agg aac tgc aaa ctt ctg gag ggt cta	1083
Glu Ala His Arg Leu Lys Asn Arg Asn Cys Lys Leu Leu Glu Gly Leu	
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Lys Leu Met Ala Leu Glu His Lys Val Leu Leu Thr Gly Thr Pro Leu	
315 320 325	
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380 385 390	
caa gag acg atc att gag gtg gaa ctg acc aat atc cag aaa aag tac	1371
Gln Glu Thr Ile Ile Glu Val Glu Leu Thr Asn Ile Gln Lys Lys Tyr	
395 400 405	
tac cgt gcc atc ctc gag aag aac ttt tcc ttc ctg acc aag ggg gca	1419
Tyr Arg Ala Ile Leu Glu Lys Asn Phe Ser Phe Leu Thr Lys Gly Ala	
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Asn Gln His Asn Met Pro Asn Leu Ile Asn Thr Met Met Glu Leu Arg	
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Leu Gln Ala Met Ile Gln Ala Ala Gly Lys Leu Val Leu Ile Asp Lys	
475 480 485	
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520 525 530 535	
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Phe Leu Leu Cys Thr Arg Ala Gly Gly Leu Gly Ile Asn Leu Thr Ala	
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Ala Asp Thr Cys Ile Ile Phe Asp Ser Asp Trp Asn Pro Gln Asn Asp	
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585 590 595	
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Trp Pro Arg Ala Gln Pro Gln Asp Asn Ala Ala Ala Ala Cys Leu Gln	
600 605 610 615	
gat ttt gga agt cag ttg gga gtc cag agt gag gag aca ggc cct ttc	2043
Asp Phe Gly Ser Gln Leu Gly Val Gln Ser Glu Glu Thr Gly Pro Phe	
620 625 630	

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Trp Ala Gln Ala Arg Cys His Arg Ile Gly Gln Ser Lys Ala Val Lys	
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715 720 725	
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745 750 755	
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Pro Arg Val Arg Lys Gln Thr Lys His Tyr Asn Ser Phe Glu Glu Asp	
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Glu Leu Met Glu Phe Ser Glu Leu Asp Ser Asp Ser Asp Glu Arg Pro	
875 880 885	

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Thr Arg Ser Arg Arg Leu Asn Asp Lys Ala Arg Arg Tyr Leu Arg Ala	
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His Tyr Lys Gly Asp Glu Lys Ile Lys Ser Phe Ile Trp Glu Leu Ile	
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Gln Leu Leu Ile Pro Glu Leu Lys Asp Ala Asp Trp Leu Ala Thr Cys	
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Ile Pro Val Asp Trp Trp Asp Ala Glu Ala Asp Lys Ser Leu Leu Ile	
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Cys Phe Asp Lys Ala Tyr Val Val Leu Gly Gln Phe Leu Val Leu Lys
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Lys Asp Glu Asp Leu Phe Arg Glu Trp Leu Arg Asp Thr Gly Gly Ala
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Asp Ala Phe Leu *
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Gln Gly Leu Glu Pro Tyr Asn Lys Val Thr Tyr Lys Pro Tyr Gln Ser	
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ctg ttc agt ctc acc agt ggg gcc tgc cgg ctg gat tac cgc aga ccc Leu Phe Ser Leu Thr Ser Gly Ala Cys Arg Leu Asp Tyr Arg Arg Pro 325 330 335	1064
gag aac agg agc ttc tac ctg gcc ctc tac aag cag atg agc ttc ctg Glu Asn Arg Ser Phe Tyr Leu Ala Leu Tyr Lys Gln Met Ser Phe Leu 340 345 350	1112
gag aag cga ggc tgc ccg cgc acg gcg ctg gag tac tgc aag ctc atc Glu Lys Arg Gly Cys Pro Arg Thr Ala Leu Glu Tyr Cys Lys Leu Ile 355 360 365 370	1160
ctg agt ctc gag ccg gat gag gac ccc ctc tgc atg ctg ctg ctc atc Leu Ser Leu Glu Pro Asp Glu Asp Pro Leu Cys Met Leu Leu Leu Ile 375 380 385	1208
gac cac ctg gcc ttg cgg gcc cgg aac tac gag tac ctg atc cgc ctc Asp His Leu Ala Leu Arg Ala Arg Asn Tyr Glu Tyr Leu Ile Arg Leu 390 395 400	1256
ttc cag gag tgg gag gtg ggt gcg agc ctg gct cat cgg aac ctg tcc Phe Gln Glu Trp Glu Val Gly Ala Ser Leu Ala His Arg Asn Leu Ser 405 410 415	1304
cag ctc cct aat ttt gcc ttc tct gtt cca ctg gcg tat ttc ctg ctg Gln Leu Pro Asn Phe Ala Phe Ser Val Pro Leu Ala Tyr Phe Leu Leu 420 425 430	1352
agc cag cag aca gac ctc cct gag tgt gag cag agc tct gcc agg cag Ser Gln Gln Thr Asp Leu Pro Glu Cys Glu Gln Ser Ser Ala Arg Gln 435 440 445 450	1400
aag gcc tct ctc ctg ata cag cag gcg ctc acc atg ttc cct gga gtc Lys Ala Ser Leu Leu Ile Gln Gln Ala Leu Thr Met Phe Pro Gly Val 455 460 465	1448
ctc ctg ccc ctg ctc gag tct tgc agt gtg cgg ccc gac gcc agc gtt Leu Leu Pro Leu Leu Glu Ser Cys Ser Val Arg Pro Asp Ala Ser Val 470 475 480	1496
tcc agt cac cgc ttc ttt gga ccc aat gct gaa ata agc cag ccc cct Ser Ser His Arg Phe Phe Gly Pro Asn Ala Glu Ile Ser Gln Pro Pro 485 490 495	1544
gcc ctg agc cag ctg gtg aac ctg tac ctt ggg agg tca cac ttt ctc Ala Leu Ser Gln Leu Val Asn Leu Tyr Leu Gly Arg Ser His Phe Leu 500 505 510	1592
tgg aaa gag ccc gcc acc atg agc tgg ctg gag gag aac gtc cac gag Trp Lys Glu Pro Ala Thr Met Ser Trp Leu Glu Glu Asn Val His Glu 515 520 525 530	1640
gtt ctg caa gca gtg gac gcc ggg gac cca gcc gtg gaa gcc tgt gag Val Leu Gln Ala Val Asp Ala Gly Asp Pro Ala Val Glu Ala Cys Glu 535 540 545	1688
aac cgg cgg aag gtg ctc tac cag cgt gca ccc agg aat atc cac cgc Asn Arg Arg Lys Val Leu Tyr Gln Arg Ala Pro Arg Asn Ile His Arg 550 555 560	1736

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cat gtg atc ctc tct gag atc aag gaa gcc gtc gct gcc ctg ccc ccg      1784
His Val Ile Leu Ser Glu Ile Lys Glu Ala Val Ala Ala Leu Pro Pro
      565              570              575

gac gtg acc acg cag tct gtg atg ggg ttt gat cct ctg cct cct tcg      1832
Asp Val Thr Thr Gln Ser Val Met Gly Phe Asp Pro Leu Pro Pro Ser
      580              585              590

gac aca atc tac tcc tac gtc agg cca gag agg cta agt cct atc agc      1880
Asp Thr Ile Tyr Ser Tyr Val Arg Pro Glu Arg Leu Ser Pro Ile Ser
      595              600              605              610

cat gga aac acc att gct ctc ttc ttc cgg tca ctg ttg cca aac tat      1928
His Gly Asn Thr Ile Ala Leu Phe Phe Arg Ser Leu Leu Pro Asn Tyr
      615              620              625

acc atg gag ggg gag agg ccc gag gaa gga gtg gct ggg ggt ctg aac      1976
Thr Met Glu Gly Glu Arg Pro Glu Glu Gly Val Ala Gly Gly Leu Asn
      630              635              640

cgc aac cag ggc ctg aac agg ctg atg ctg gct gtg cgc gac atg atg      2024
Arg Asn Gln Gly Leu Asn Arg Leu Met Leu Ala Val Arg Asp Met Met
      645              650              655

gcc aac ttc cac ctc aac gac ctg gag gcg ccg cac gag gac gac gct      2072
Ala Asn Phe His Leu Asn Asp Leu Glu Ala Pro His Glu Asp Asp Ala
      660              665              670

gag ggg gag ggg gag tgg gac tga gcgtccgcag aggtgaccga aaagccgtat      2126
Glu Gly Glu Gly Glu Trp Asp *
      675              680

gatgatgttc ccgatttctc tgttggtcgg agtcggccag ttgcctgaag tagggaagct      2186

gagtgtgtcg ctccctgggc cactgtttct cctataaatg taaatgggtc acaaaaaaaaaa      2246

aaaa                                                                    2250

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                                                                1

cgc cgg gcc ctc cgg agg ctg agg ggg gaa cag cgc ggc cag gag ccc      104
Arg Arg Ala Leu Arg Arg Leu Arg Gly Glu Gln Arg Gly Gln Glu Pro
      5              10              15

ctc ggg ccc ggc gcc ttg cat ttc gat ctc cgt gat gac gat gac gcg      152
Leu Gly Pro Gly Ala Leu His Phe Asp Leu Arg Asp Asp Asp Ala
      20              25              30

gaa gaa gaa ggg ccc aag cgg gag ctt ggt gtc cgg cgt ccc ggg ggc      200

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1684

Arg	Asp	Leu	Val	Glu	Arg	Ala	Leu	Tyr	Ser	Met	Glu	Cys	Ala	Phe	His	
				295					300					305		
ccc	ctg	ttc	agt	ctc	acc	agt	ggg	gcc	tgc	cgg	ctg	gat	tac	cgc	aga	1016
Pro	Leu	Phe	Ser	Leu	Thr	Ser	Gly	Ala	Cys	Arg	Leu	Asp	Tyr	Arg	Arg	
			310					315					320			
ccc	gag	aac	agg	agc	ttc	tac	ctg	gcc	ctc	tac	aag	cag	atg	agc	ttc	1064
Pro	Glu	Asn	Arg	Ser	Phe	Tyr	Leu	Ala	Leu	Tyr	Lys	Gln	Met	Ser	Phe	
		325						330				335				
ctg	gag	aag	cga	ggc	tgc	ccg	cgc	acg	gcg	ctg	gag	tac	tgc	aag	ctc	1112
Leu	Glu	Lys	Arg	Gly	Cys	Pro	Arg	Thr	Ala	Leu	Glu	Tyr	Cys	Lys	Leu	
		340					345					350				
atc	ctg	agt	ctc	gag	ccg	gat	gag	gac	ccc	ctc	tgc	atg	ctg	ctg	ctc	1160
Ile	Leu	Ser	Leu	Glu	Pro	Asp	Glu	Asp	Pro	Leu	Cys	Met	Leu	Leu	Leu	
					360					365					370	
atc	gac	cac	ctg	gcc	ttg	cgg	gcc	cgg	aac	tac	gag	tac	ctg	atc	cgc	1208
Ile	Asp	His	Leu	Ala	Leu	Arg	Ala	Arg	Asn	Tyr	Glu	Tyr	Leu	Ile	Arg	
				375					380					385		
ctc	ttc	cag	gag	tgg	gag	gtg	ggt	gcg	agc	ctg	gct	cat	cgg	aac	ctg	1256
Leu	Phe	Gln	Glu	Trp	Glu	Val	Gly	Ala	Ser	Leu	Ala	His	Arg	Asn	Leu	
			390					395					400			
tcc	cag	ctc	cct	aat	ttt	gcc	ttc	tct	gtt	cca	ctg	gcg	tat	ttc	ctg	1304
Ser	Gln	Leu	Pro	Asn	Phe	Ala	Phe	Ser	Val	Pro	Leu	Ala	Tyr	Phe	Leu	
		405					410					415				
ctg	agc	cag	cag	aca	gac	ctc	cct	gag	tgt	gag	cag	agc	tct	gcc	agg	1352
Leu	Ser	Gln	Gln	Thr	Asp	Leu	Pro	Glu	Cys	Glu	Gln	Ser	Ser	Ala	Arg	
		420					425					430				
cag	aag	gcc	tct	ctc	ctg	ata	cag	cag	gcg	ctc	acc	atg	ttc	cct	gga	1400
Gln	Lys	Ala	Ser	Leu	Leu	Ile	Gln	Gln	Ala	Leu	Thr	Met	Phe	Pro	Gly	
					440					445					450	
gtc	ctc	ctg	ccc	ctg	ctc	gag	tct	tgc	agt	gtg	cgg	ccc	gac	gcc	agc	1448
Val	Leu	Leu	Pro	Leu	Leu	Glu	Ser	Cys	Ser	Val	Arg	Pro	Asp	Ala	Ser	
				455					460					465		
gtt	tcc	agt	cac	cgc	ttc	ttt	gga	ccc	aat	gct	gaa	ata	agc	cag	ccc	1496
Val	Ser	Ser	His	Arg	Phe	Phe	Gly	Pro	Asn	Ala	Glu	Ile	Ser	Gln	Pro	
			470					475					480			
cct	gcc	ctg	agc	cag	ctg	gtg	aac	ctg	tac	ctt	ggg	agg	tca	cac	ttt	1544
Pro	Ala	Leu	Ser	Gln	Leu	Val	Asn	Leu	Tyr	Leu	Gly	Arg	Ser	His	Phe	
		485					490					495				
ctc	tgg	aaa	gag	ccc	gcc	acc	atg	agc	tgg	ctg	gag	gag	aac	gtc	cac	1592
Leu	Trp	Lys	Glu	Pro	Ala	Thr	Met	Ser	Trp	Leu	Glu	Glu	Asn	Val	His	
		500					505					510				
gag	gtt	ctg	caa	gca	gtg	gac	gcc	ggg	gac	cca	gcc	gtg	gaa	gcc	tgt	1640
Glu	Val	Leu	Gln	Ala	Val	Asp	Ala	Gly	Asp	Pro	Ala	Val	Glu	Ala	Cys	
					520					525					530	
gag	aac	cgg	cgg	aag	gtg	ctc	tac	cag	cgt	gca	ccc	agg	aat	atc	cac	1688
Glu	Asn	Arg	Arg	Lys	Val	Leu	Tyr	Gln	Arg	Ala	Pro	Arg	Asn	Ile	His	
				535					540					545		
cgc	cat	gtg	atc	ctc	tct	gag	atc	aag	gaa	gcc	gtc	gct	gcc	ctg	ccc	1736

Arg His Val	Ile Leu Ser Glu Ile Lys Glu Ala Val Ala Ala Leu Pro	
	550 555 560	
ccg gac gtg acc acg cag tct gtg atg ggg ttt gat cct ctg cct cct		1784
Pro Asp Val Thr Thr Gln Ser Val Met Gly Phe Asp Pro Leu Pro Pro		
	565 570 575	
tcg gac aca atc tac tcc tac gtc agg cca gag agg cta agt cct atc		1832
Ser Asp Thr Ile Tyr Ser Tyr Val Arg Pro Glu Arg Leu Ser Pro Ile		
	580 585 590	
agc cat gga aac acc att gct ctc ttc ttc cgg tca ctg ttg cca aac		1880
Ser His Gly Asn Thr Ile Ala Leu Phe Phe Arg Ser Leu Leu Pro Asn		
	595 600 605 610	
tat acc atg gag ggg gag agg ccc gag gaa gga gtg gct ggg ggt ctg		1928
Tyr Thr Met Glu Gly Glu Arg Pro Glu Glu Gly Val Ala Gly Gly Leu		
	615 620 625	
aac cgc aac cag ggc ctg aac agg ctg atg ctg gct gtg cgc gac atg		1976
Asn Arg Asn Gln Gly Leu Asn Arg Leu Met Leu Ala Val Arg Asp Met		
	630 635 640	
atg gcc aac ttc cac ctc aac gac ctg gag gcg ccg cac gag gac gac		2024
Met Ala Asn Phe His Leu Asn Asp Leu Glu Ala Pro His Glu Asp Asp		
	645 650 655	
gct gag ggg gag ggg gag tgg gac tga gcgtc cgcagaggtg accgaaaagc		2076
Ala Glu Gly Glu Gly Glu Trp Asp *		
	660 665	
cgtatgatga tgttcccgat ttctctgttg gtcggagtcg gccagttgcc tgaagtaggg		2136
aagctgagtg tgctgctccc tggteccactg tttctcctat aaatgtaaat gggtcacaaa		2196
aaaaaaaa		2205

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gcggccgccc aagccagtgc aaggcccagg ggcctgacat cgctcccagc gctcgaggac	120
cgaggcctgc tgtggaggac accgtgctcc ctcgggacct gctctggatt ccggcccgga	180
cgtccccttg gagctctgca tctccaacct ggaacccaac ccagaagtct caagtttgac	240
gcatacacgtg gcgtgcggat ccactgaggg tccacagaga ggggcgccc tctcctgcgt	300
ctcagttatc ctggtgttgg gaattctgtg ccctaaagaa ttccgactca gatccgaacg	360
gggatctggt ggaatcgagg gtgaaagacc agagggaca atg ttc tac tat ccc	414
	Met Phe Tyr Tyr Pro

1

5

aac	gtg	ctt	cag	cgc	cac	acc	ggc	tgc	ttt	gcc	acc	atc	tgg	ctg	gcg	462
Asn	Val	Leu	Gln	Arg	His	Thr	Gly	Cys	Phe	Ala	Thr	Ile	Trp	Leu	Ala	
			10					15						20		
gcg	act	cgc	ggc	agc	cgg	ttg	gtg	aag	cgc	gaa	tac	ctg	agg	gtg	aat	510
Ala	Thr	Arg	Gly	Ser	Arg	Leu	Val	Lys	Arg	Glu	Tyr	Leu	Arg	Val	Asn	
			25					30						35		
gtg	gtg	aaa	acc	tgc	gag	gaa	atc	ctc	aat	tac	gtg	ctg	gta	cga	gtg	558
Val	Val	Lys	Thr	Cys	Glu	Glu	Ile	Leu	Asn	Tyr	Val	Leu	Val	Arg	Val	
		40					45						50			
caa	ccc	ccg	cag	ccc	ggc	ctg	ccg	cgg	ccc	cgc	ttc	tcc	ctc	tat	ctc	606
Gln	Pro	Pro	Gln	Pro	Gly	Leu	Pro	Arg	Pro	Arg	Phe	Ser	Leu	Tyr	Leu	
	55					60					65					
tca	gcc	caa	ctt	cag	atc	ggc	gtg	atc	cgc	gtc	tat	tct	caa	caa	tgc	654
Ser	Ala	Gln	Leu	Gln	Ile	Gly	Val	Ile	Arg	Val	Tyr	Ser	Gln	Gln	Cys	
	70				75					80					85	
cag	tac	ctc	gtg	gag	gac	atc	cag	cac	atc	ttg	gag	cgc	ctc	cac	cgt	702
Gln	Tyr	Leu	Val	Glu	Asp	Ile	Gln	His	Ile	Leu	Glu	Arg	Leu	His	Arg	
				90					95					100		
gcc	cag	ctg	cag	atc	cga	ata	gat	atg	gag	act	gag	cta	ccc	agc	ctg	750
Ala	Gln	Leu	Gln	Ile	Arg	Ile	Asp	Met	Glu	Thr	Glu	Leu	Pro	Ser	Leu	
			105					110					115			
ctg	ctt	cct	aac	cac	ctg	gcc	atg	atg	gag	acc	cta	gaa	gat	gct	cca	798
Leu	Leu	Pro	Asn	His	Leu	Ala	Met	Met	Glu	Thr	Leu	Glu	Asp	Ala	Pro	
		120					125					130				
gat	ccc	ttt	ttt	ggg	atg	atg	tct	gtg	gat	ccc	aga	ctt	cct	agt	cct	846
Asp	Pro	Phe	Phe	Gly	Met	Met	Ser	Val	Asp	Pro	Arg	Leu	Pro	Ser	Pro	
	135					140					145					
ttc	gat	atc	cct	cag	att	cga	cac	ctc	tta	gag	gct	gca	atc	cca	gag	894
Phe	Asp	Ile	Pro	Gln	Ile	Arg	His	Leu	Leu	Glu	Ala	Ala	Ile	Pro	Glu	
	150				155					160					165	
aga	gtt	gaa	gag	atc	cct	cct	gaa	gtt	cct	aca	gag	ccc	agg	gag	cca	942
Arg	Val	Glu	Glu	Ile	Pro	Pro	Glu	Val	Pro	Thr	Glu	Pro	Arg	Glu	Pro	
				170					175					180		
gag	agg	att	ccg	gtc	act	gtg	ctg	cca	cct	gag	gcc	atc	acg	atc	ctg	990
Glu	Arg	Ile	Pro	Val	Thr	Val	Leu	Pro	Pro	Glu	Ala	Ile	Thr	Ile	Leu	
			185					190					195			
gag	gca	gag	ccc	ata	cgg	atg	ctg	gag	att	gag	ggc	gaa	cgg	gag	ctc	1038
Glu	Ala	Glu	Pro	Ile	Arg	Met	Leu	Glu	Ile	Glu	Gly	Glu	Arg	Glu	Leu	
		200					205					210				
cca	gag	gtc	agc	cgc	cga	gaa	ctg	gac	ctg	ctg	atc	gca	gag	gaa	gaa	1086
Pro	Glu	Val	Ser	Arg	Arg	Glu	Leu	Asp	Leu	Leu	Ile	Ala	Glu	Glu	Glu	
	215					220					225					
gaa	gct	atc	ttg	tta	gaa	atc	ccg	cgg	ctc	cca	cct	cca	gct	cct	gca	1134
Glu	Ala	Ile	Leu	Leu	Glu	Ile	Pro	Arg	Leu	Pro	Pro	Pro	Ala	Pro	Ala	
	230				235					240					245	
gag	gtg	gaa	gga	ata	gga	gag	gca	ctg	ggc	cct	gag	gag	ctg	agg	ctg	1182
Glu	Val	Glu	Gly	Ile	Gly	Glu	Ala	Leu	Gly	Pro	Glu	Glu	Leu	Arg	Leu	

1688

505	510	515	
ctc ctg gtg ctc tca gcg caa cag att ctt cac gtg aaa caa gaa aag			1998
Leu Leu Val Leu Ser Ala Gln Gln Ile Leu His Val Lys Gln Glu Lys			
520	525	530	
cca tat ggt cgc ctc ctg atc cag ccg ggg ccc aga ttc cac tga ggt			2046
Pro Tyr Gly Arg Leu Leu Ile Gln Pro Gly Pro Arg Phe His *			
535	540	545	
tagagtccat ttacaaagct gccaggaaac cggccacttc tagtaaacca cgtcgtgcct			2106
cactgggtcc tgcttacctc atttctgaat gtgcatttcc agccttcttg ctctcagagc			2166
tattgttcaa gcagaaaaca agctgctttt attacagtat gatgtcatga ctcatattgta			2226
acagatccag cctcagggac agccctgtaa ggcagcaagt ggggctggct ccaaattgggt			2286
atgagtctca gaatcttttg taaggcagaa ctgaactggg ctgagaggtg gtcttaaggc			2346
ctgggcaggc tctattctct ctggactggc tgcagcctgc agtctaggag aggcccagta			2406
cagcctggag ctcttgagcc ttgtcaacag gcagtgagcc cagagctgct tgaaagctgt			2466
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gcctcgaggg ccaaat			2542

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cgaggcctgc tgtggaggac accgtgctcc ctcgggacct gctctggatt ccggcccgga	180
cgtccccttg gagctctgca tctccaacct ggaacccaac ccagaagtct caagtttgac	240
gcatcacgtg gcgtgcggat ccactgaggg tccacagaga ggggcgccc tctcctgcgt	300
ctcagttatc ctggtgttgg gaattctgtg ccctaaagaa ttccgactca gatccgaacg	360
gggatctggt ggaatcgagg gtgaaagacc agagggaca	414
atg ttc tac tat ccc	5
Met Phe Tyr Tyr Pro	
1	
aac gtg ctt cag cgc cac acc ggc tgc ttt gcc acc atc tgg ctg gcg	462
Asn Val Leu Gln Arg His Thr Gly Cys Phe Ala Thr Ile Trp Leu Ala	
10 15 20	
gcg act cgc ggc agc cgg ttg gtg aag cgc gaa tac ctg agg gtg aat	510
Ala Thr Arg Gly Ser Arg Leu Val Lys Arg Glu Tyr Leu Arg Val Asn	
25 30 35	

gtg gtg aaa acc tgc gag gaa atc ctc aat tac gtg ctg gta cga gtg Val Val Lys Thr Cys Glu Glu Ile Leu Asn Tyr Val Leu Val Arg Val	558
40 45 50	
caa ccc ccg cag ccc ggc ctg ccg cgg ccc cgc ttc tcc ctc tat ctc Gln Pro Pro Gln Pro Gly Leu Pro Arg Pro Arg Phe Ser Leu Tyr Leu	606
55 60 65	
tca gcc caa ctt cag atc ggt gtg atc cgc gtc tat tct caa caa tgc Ser Ala Gln Leu Gln Ile Gly Val Ile Arg Val Tyr Ser Gln Gln Cys	654
70 75 80 85	
cag tac ctc gtg gag gac atc cag cac atc ttg gag cgc ctc cac cgt Gln Tyr Leu Val Glu Asp Ile Gln His Ile Leu Glu Arg Leu His Arg	702
90 95 100	
gcc cag ctg cag atc cga ata gat atg gag act gag cta ccc agc ctg Ala Gln Leu Gln Ile Arg Ile Asp Met Glu Thr Glu Leu Pro Ser Leu	750
105 110 115	
ctg ctt cct aac cac ctg gcc atg atg gag acc cta gaa gat gct cca Leu Leu Pro Asn His Leu Ala Met Met Glu Thr Leu Glu Asp Ala Pro	798
120 125 130	
gat ccc ttt ttt ggg atg atg tct gtg gat ccc aga ctt cct agt cct Asp Pro Phe Phe Gly Met Met Ser Val Asp Pro Arg Leu Pro Ser Pro	846
135 140 145	
ttc gat atc cct cag att cga cac ctc tta gag gct gca atc cca gag Phe Asp Ile Pro Gln Ile Arg His Leu Leu Glu Ala Ala Ile Pro Glu	894
150 155 160 165	
aga gtt gaa gag atc cct cct gaa gtt cct aca gag ccc agg gag cca Arg Val Glu Glu Ile Pro Pro Glu Val Pro Thr Glu Pro Arg Glu Pro	942
170 175 180	
gag agg att ccg gtc act gtg ctg cca cct gag gcc atc acg atc ctg Glu Arg Ile Pro Val Thr Val Leu Pro Pro Glu Ala Ile Thr Ile Leu	990
185 190 195	
gag gca gag ccc ata cgg atg ctg gag att gag ggt gaa cgg gag ctc Glu Ala Glu Pro Ile Arg Met Leu Glu Ile Glu Gly Glu Arg Glu Leu	1038
200 205 210	
cca gag gtc agc cgc cga gaa ctg gac ctg ctg atc gca gag gaa gaa Pro Glu Val Ser Arg Arg Glu Leu Asp Leu Leu Ile Ala Glu Glu Glu	1086
215 220 225	
gaa gct atc ttg tta gaa atc ccg cgg ctc cca cct cca gct cct gca Glu Ala Ile Leu Leu Glu Ile Pro Arg Leu Pro Pro Pro Ala Pro Ala	1134
230 235 240 245	
gag gtg gaa gga ata gga gag gca ctg ggt cct gag gag ctg agg ctg Glu Val Glu Gly Ile Gly Glu Ala Leu Gly Pro Glu Glu Leu Arg Leu	1182
250 255 260	
aca ggc tgg gaa cct ggg gcc cta ctc atg gag gtg acc ccc ccg gag Thr Gly Trp Glu Pro Gly Ala Leu Leu Met Glu Val Thr Pro Pro Glu	1230
265 270 275	
gag ctg cgt ctg cca gcc cca ccc agc cca gag agg agg ccc cca gtc Glu Leu Arg Leu Pro Ala Pro Pro Ser Pro Glu Arg Arg Pro Pro Val	1278
280 285 290	

ccc cca cct cct cgc cgc cgc cgt cgt cgc cgg tta ctg ttc tgg gac	1326
Pro Pro Pro Pro Arg Arg Arg Arg Arg Arg Arg Arg Leu Leu Phe Trp Asp	
295 300 305	
aag gag act cag atc tcc ccg gag aaa ttc cag gaa caa ctg caa acc	1374
Lys Glu Thr Gln Ile Ser Pro Glu Lys Phe Gln Glu Gln Leu Gln Thr	
310 315 320 325	
aga gcc cac tgc tgg gaa tgt cct atg gtg cag ccg ccc gag agg acc	1422
Arg Ala His Cys Trp Glu Cys Pro Met Val Gln Pro Pro Glu Arg Thr	
330 335 340	
atc aga ggc cct gcg gag ttg ttc aga acc cca act ctc tct ggc tgg	1470
Ile Arg Gly Pro Ala Glu Leu Phe Arg Thr Pro Thr Leu Ser Gly Trp	
345 350 355	
cta ccc cct gaa cta ctg ggt ctc tgg acc cat tgt gcc cag cca ccc	1518
Leu Pro Pro Glu Leu Leu Gly Leu Trp Thr His Cys Ala Gln Pro Pro	
360 365 370	
cca aaa gcc ctc agg cga gag ctg cct gag gag gca gcc gct gag gag	1566
Pro Lys Ala Leu Arg Arg Glu Leu Pro Glu Glu Ala Ala Ala Glu Glu	
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Glu Arg Arg Lys Ile Glu Val Pro Ser Glu Ile Glu Val Pro Arg Glu	
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Ala Leu Glu Pro Ser Val Pro Leu Met Val Ser Leu Glu Ile Ser Leu	
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Glu Ala Ala Glu Glu Glu Lys Ser Arg Ile Ser Leu Ile Pro Pro Glu	
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Glu Arg Trp Ala Trp Pro Glu Val Glu Ala Pro Glu Ala Pro Ala Leu	
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Pro Val Val Pro Glu Leu Pro Glu Val Pro Met Glu Met Pro Leu Val	
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Leu Pro Pro Glu Leu Glu Leu Leu Ser Leu Glu Ala Val His Ser Pro	
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Arg Arg Met Ala Ala Arg Val Phe Tyr Leu Leu Leu Val Leu Ser Ala	
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Gln Gln Ile Leu His Val Lys Gln Glu Lys Pro Tyr Gly Arg Leu Leu	
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Ile Gln Pro Gly Pro Arg Phe His *	
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 Gly Gln Leu Ser Phe Lys Gly Lys Ser Leu Lys Leu Asn Thr Ala Glu
 25 30 35
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 Asp Ala Lys Asp Val Ile Lys Glu Ile Glu Asp Phe Asp Ser Leu Glu
 40 45 50
 gct ctg cgt ctg gaa ggc aac aca gtg ggc gtg gaa gca gcc agg gtc 546
 Ala Leu Arg Leu Glu Gly Asn Thr Val Gly Val Glu Ala Ala Arg Val
 55 60 65
 atc gcc aag gcc tta gag aag aag tcg gag ttg aag cgc tgc cac tgg 594
 Ile Ala Lys Ala Leu Glu Lys Lys Ser Glu Leu Lys Arg Cys His Trp
 70 75 80
 agt gac atg ttc acg gga agg ctg cgg acc gag atc cca cca gcc ctg 642
 Ser Asp Met Phe Thr Gly Arg Leu Arg Thr Glu Ile Pro Pro Ala Leu
 85 90 95 100

atc tca cta ggg gaa gga ctc atc aca gct ggg gct cag ctg gtg gag Ile Ser Leu Gly Glu Gly Leu Ile Thr Ala Gly Ala Gln Leu Val Glu 105 110 115	690
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gct ctg acc gaa tgt cac cgg aaa tcc agt gcc caa ggc aag cct ctg Ala Leu Thr Glu Cys His Arg Lys Ser Ser Ala Gln Gly Lys Pro Leu 165 170 175 180	882
gcc ctg aag gtc ttt gtg gct ggc aga aac cgt ctg gag aat gat ggc Ala Leu Lys Val Phe Val Ala Gly Arg Asn Arg Leu Glu Asn Asp Gly 185 190 195	930
gcc act gcc ttg gca gaa gct ttt agg gtc atc ggg acc ctg gag gag Ala Thr Ala Leu Ala Glu Ala Phe Arg Val Ile Gly Thr Leu Glu Glu 200 205 210	978
gtc cac atg cca cag aat ggg atc aac cac cct ggc atc act gcc ctg Val His Met Pro Gln Asn Gly Ile Asn His Pro Gly Ile Thr Ala Leu 215 220 225	1026
gcc cag gct ttc gct gtc aac ccc ctg ctg cgg gtc atc aac ctg aat Ala Gln Ala Phe Ala Val Asn Pro Leu Leu Arg Val Ile Asn Leu Asn 230 235 240	1074
gac aac acc ttc act gag aag ggc gcc gtg gcc atg gcc gag acc ttg Asp Asn Thr Phe Thr Glu Lys Gly Ala Val Ala Met Ala Glu Thr Leu 245 250 255 260	1122
aag acc ttg cgg cag gtg gag gtg att aat ttt ggg gac tgc ctg gtg Lys Thr Leu Arg Gln Val Glu Val Ile Asn Phe Gly Asp Cys Leu Val 265 270 275	1170
cgc tcc aag ggt gca gtt gcc att gca gat gcc atc cgc ggc ggc ctg Arg Ser Lys Gly Ala Val Ala Ile Ala Asp Ala Ile Arg Gly Gly Leu 280 285 290	1218
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ctc agt gat gac gag gac gag gag gag gag gag gaa gga gaa gag gaa Leu Ser Asp Asp Glu Asp Glu Glu Glu Glu Glu Glu Glu Gly Glu Glu Glu	1458
360 365 370	
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375 380 385	
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390 395 400	
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gag cca gct ccc gtg ctg tcc tcc cca cct cct gca gac gtc tcc acc Glu Pro Ala Pro Val Leu Ser Ser Pro Pro Pro Ala Asp Val Ser Thr	1650
425 430 435	
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455 460 465	
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470 475 480	
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485 490 495 500	
gct ttc aac tcc tcg tcc ttc aac tcc aac acc ttc ctc acc agg ctc Ala Phe Asn Ser Ser Ser Phe Asn Ser Asn Thr Phe Leu Thr Arg Leu	1890
505 510 515	
ctc gtg cac atg ggt ctg ctc aag agt gaa gac aag gtc aag gcc att Leu Val His Met Gly Leu Leu Lys Ser Glu Asp Lys Val Lys Ala Ile	1938
520 525 530	
gcc aac ctg tac ggc ccc ctg atg gcg ctg aac cac atg gtg cag cag Ala Asn Leu Tyr Gly Pro Leu Met Ala Leu Asn His Met Val Gln Gln	1986
535 540 545	
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585	
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 Met Ala Ser Glu
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 gac att gcc aag ctg gca gag aca ctt gcc aag act cag gtg gcc ggg 402
 Asp Ile Ala Lys Leu Ala Glu Thr Leu Ala Lys Thr Gln Val Ala Gly
 5 10 15 20
 gga cag ctg agt ttc aaa ggc aag agc ctc aaa ctc aac act gca gaa 450
 Gly Gln Leu Ser Phe Lys Gly Lys Ser Leu Lys Leu Asn Thr Ala Glu
 25 30 35

gat gct aaa gat gtg att aaa gag att gaa gac ttt gac agc ttg gag	498
Asp Ala Lys Asp Val Ile Lys Glu Ile Glu Asp Phe Asp Ser Leu Glu	
40 45 50	
gct ctg cgt ctg gaa ggc aac aca gtg ggc gtg gaa gca gcc agg gtc	546
Ala Leu Arg Leu Glu Gly Asn Thr Val Gly Val Glu Ala Ala Arg Val	
55 60 65	
atc gcc aag gcc tta gag aag aag tcg gag ttg aag cgc tgc cac tgg	594
Ile Ala Lys Ala Leu Glu Lys Lys Ser Glu Leu Lys Arg Cys His Trp	
70 75 80	
agt gac atg ttc acg gga agg ctg cgg acc gag atc cca cca gcc ctg	642
Ser Asp Met Phe Thr Gly Arg Leu Arg Thr Glu Ile Pro Pro Ala Leu	
85 90 95 100	
atc tca cta ggg gaa gga ctc atc aca gct ggg gct cag ctg gtg gag	690
Ile Ser Leu Gly Glu Gly Leu Ile Thr Ala Gly Ala Gln Leu Val Glu	
105 110 115	
ctg gac tta agc gac aac gca ttc ggg ccc gac ggt gtg caa ggc ttc	738
Leu Asp Leu Ser Asp Asn Ala Phe Gly Pro Asp Gly Val Gln Gly Phe	
120 125 130	
gag gcc ctg ctc aag agc tca gcc tgc ttc acc ctg cag gaa ctc aag	786
Glu Ala Leu Leu Lys Ser Ser Ala Cys Phe Thr Leu Gln Glu Leu Lys	
135 140 145	
ctc aac aac tgt ggc atg ggc att ggc ggc ggc aag atc ctg gct gca	834
Leu Asn Asn Cys Gly Met Gly Ile Gly Gly Gly Lys Ile Leu Ala Ala	
150 155 160	
gct ctg acc gaa tgt cac cgg aaa tcc agt gcc caa ggc aag cct ctg	882
Ala Leu Thr Glu Cys His Arg Lys Ser Ser Ala Gln Gly Lys Pro Leu	
165 170 175 180	
gcc ctg aag gtc ttt gtg gct ggc aga aac cgt ctg gag aat gat ggc	930
Ala Leu Lys Val Phe Val Ala Gly Arg Asn Arg Leu Glu Asn Asp Gly	
185 190 195	
gcc act gcc ttg gca gaa gct ttt agg gtc atc ggg acc ctg gag gag	978
Ala Thr Ala Leu Ala Glu Ala Phe Arg Val Ile Gly Thr Leu Glu Glu	
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gtc cac atg cca cag aat ggg atc aac cac cct ggc atc act gcc ctg	1026
Val His Met Pro Gln Asn Gly Ile Asn His Pro Gly Ile Thr Ala Leu	
215 220 225	
gcc cag gct ttc gct gtc aac ccc ctg ctg cgg gtc atc aac ctg aat	1074
Ala Gln Ala Phe Ala Val Asn Pro Leu Leu Arg Val Ile Asn Leu Asn	
230 235 240	
gac aac acc ttc act gag aag ggc gcc gtg gcc atg gcc gag acc ttg	1122
Asp Asn Thr Phe Thr Glu Lys Gly Ala Val Ala Met Ala Glu Thr Leu	
245 250 255 260	
aag acc ttg cgg cag gtg gag gtg att aat ttt ggg gac tgc ctg gtg	1170
Lys Thr Leu Arg Gln Val Glu Val Ile Asn Phe Gly Asp Cys Leu Val	
265 270 275	
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Arg Ser Lys Gly Ala Val Ala Ile Ala Asp Ala Ile Arg Gly Gly Leu	
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tct gac ccc gag aag gtg gtc tct gcc ttc cta aag gtg tca tct gtg Ser Asp Pro Glu Lys Val Val Ser Ala Phe Leu Lys Val Ser Ser Val 440 445 450	1698
ttc aag gac gaa gct act gtg agg atg gca gtg cag gat gca gta gat Phe Lys Asp Glu Ala Thr Val Arg Met Ala Val Gln Asp Ala Val Asp 455 460 465	1746
gcc ctg atg cag aag gct ttc aac tcc tcg tcc ttc aac tcc aac acc Ala Leu Met Gln Lys Ala Phe Asn Ser Ser Ser Phe Asn Ser Asn Thr 470 475 480	1794
ttc ctc acc agg ctc ctc gtg cac atg ggt ctg ctc aag agt gaa gac Phe Leu Thr Arg Leu Leu Val His Met Gly Leu Leu Lys Ser Glu Asp 485 490 495 500	1842
aag gtc aag gcc att gcc aac ctg tac ggc ccc ctg atg gcg ctg aac Lys Val Lys Ala Ile Ala Asn Leu Tyr Gly Pro Leu Met Ala Leu Asn 505 510 515	1890
cac atg gtg cag cag gac tat ttc ccc aag gcc ctt gca ccc ctg ctg His Met Val Gln Gln Asp Tyr Phe Pro Lys Ala Leu Ala Pro Leu Leu 520 525 530	1938
ctg gcg ttc gtg acc aag ccc aac agc gcc ctg gaa tcc tgc tcc ttc Leu Ala Phe Val Thr Lys Pro Asn Ser Ala Leu Glu Ser Cys Ser Phe 535 540 545	1986

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gcc cgc cac agt ctg ctg cag acg ctg tac aag gtc tag actcaaagcc 2035
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550 555 560

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ccgcttagag atttgggggg ctctggcccc gtccttgctg accattccga ggggagtcca 180
gaggtgtcag taattaacac tgtggatacc tcccatgagg ac atg att cac gac 234
Met Ile His Asp
1

gcc cag atg gac tac tat ggc acc cgc ctg gca acc tgc tca tca gac 282
Ala Gln Met Asp Tyr Tyr Gly Thr Arg Leu Ala Thr Cys Ser Ser Asp

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Arg Ser Val Lys Ile Phe Asp Val Arg Asn Gly Gly Gln Ile Leu Ile	25	30	35	
gcc gac ctc agg ggt cat gag ggt cct gtg tgg caa gtg gcc tgg gct				378
Ala Asp Leu Arg Gly His Glu Gly Pro Val Trp Gln Val Ala Trp Ala	40	45	50	
cac ccc atg tac ggc aac atc ctg gca tcg tgc tcc tat gac cgg aaa				426
His Pro Met Tyr Gly Asn Ile Leu Ala Ser Cys Ser Tyr Asp Arg Lys	55	60	65	
gtc att atc tgg aga gag gaa aac ggc acc tgg gag aag agc cac gag				474
Val Ile Ile Trp Arg Glu Glu Asn Gly Thr Trp Glu Lys Ser His Glu	70	75	80	
cat gcg gga cac gac tcc tca gtg aac tcg gtg tgc tgg gcc ccc cat				522
His Ala Gly His Asp Ser Ser Val Asn Ser Val Cys Trp Ala Pro His	85	90	95	100
gac tac ggc ctg atc ctg gcc tgt ggg agc tcg gat ggg gcc atc tcc				570
Asp Tyr Gly Leu Ile Leu Ala Cys Gly Ser Ser Asp Gly Ala Ile Ser	105	110	115	
ctg ctg act tac acc ggg gaa ggc caa tgg gaa gta aag aag atc aac				618
Leu Leu Thr Tyr Thr Gly Glu Gly Gln Trp Glu Val Lys Lys Ile Asn	120	125	130	
aac gct cac acc att ggc tgc aat gcc gtc agc tgg gcc cct gct gtt				666
Asn Ala His Thr Ile Gly Cys Asn Ala Val Ser Trp Ala Pro Ala Val	135	140	145	
gta cct gga agc ctc ata gac cac cca tcg ggg cag aaa ccc aat tac				714
Val Pro Gly Ser Leu Ile Asp His Pro Ser Gly Gln Lys Pro Asn Tyr	150	155	160	
atc aag agg ttt gca tca ggt ggc tgt gac aac ctc atc aag ctg tgg				762
Ile Lys Arg Phe Ala Ser Gly Gly Cys Asp Asn Leu Ile Lys Leu Trp	165	170	175	180
aag gag gag gag gac ggc cag tgg aag gag gag cag aag cta gaa gcg				810
Lys Glu Glu Glu Asp Gly Gln Trp Lys Glu Glu Gln Lys Leu Glu Ala	185	190	195	
cac agt gac tgg gtt cga gat gtg gcc tgg gcc ccc tcc atc ggc ctg				858
His Ser Asp Trp Val Arg Asp Val Ala Trp Ala Pro Ser Ile Gly Leu	200	205	210	
ccc acc agc acc atc gcc agc tgc tcc cag gat ggt cgt gtg ttc att				906
Pro Thr Ser Thr Ile Ala Ser Cys Ser Gln Asp Gly Arg Val Phe Ile	215	220	225	
tgg acc tgt gat gat gcc tca agc aat acg tgg tcc cct aaa ttg ttg				954
Trp Thr Cys Asp Asp Ala Ser Ser Asn Thr Trp Ser Pro Lys Leu Leu	230	235	240	
cac aag ttc aac gat gtg gtg tgg cat gtg agc tgg tcc atc aca gcc				1002
His Lys Phe Asn Asp Val Val Trp His Val Ser Trp Ser Ile Thr Ala	245	250	255	260
aac atc ctg gct gtc tct ggt gga gac aat aag gtg acc ctg tgg aag				1050
Asn Ile Leu Ala Val Ser Gly Gly Asp Asn Lys Val Thr Leu Trp Lys				

	265	270	275	
gag tca gtt gat ggg cag tgg gtg tgc atc agt gat gtc aac aag ggc				1098
Glu Ser Val Asp Gly Gln Trp Val Cys Ile Ser Asp Val Asn Lys Gly				
	280	285	290	
cag ggc tcc gta tca gca tca gtg aca gag ggc cag cag aac gag cag				1146
Gln Gly Ser Val Ser Ala Ser Val Thr Glu Gly Gln Gln Asn Glu Gln				
	295	300	305	
tgacaagaca ggtggggcct ggctccccac ccgccagctc caggactgcc ccttcctggg				1206
ccaactaacc aaacaactgg gaagagcccc caactccaac aggattatct tcccaggagg				1266
agttacagat gcagccacag attgatcatc tgccttaacg tgateggaga tgctttgtaa				1326
tctactgtcc agctgaaagc actcatgtta cgaggaagaa actacaagtg atgttcaa				1386
ctattttggg tcatttttat gtaccttggg gttcaggcat tattttggggg gttttgtttc				1446
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ggagagtcaa ggag atg act tct acc ttg cca aag gcc ttg gga aga aag	170
Met Thr Ser Thr Leu Pro Lys Ala Leu Gly Arg Lys	
1 5 10	
aca gca tca agg tct cac aca aca ctc cag gga ggc agc tgc tgc cca	218
Thr Ala Ser Arg Ser His Thr Thr Leu Gln Gly Gly Ser Cys Cys Pro	
15 20 25	
gtg ctg tgg aca gca aag ctt cgg tgc agg aaa tta aga ttc ccc ctg	266
Val Leu Trp Thr Ala Lys Leu Arg Cys Arg Lys Leu Arg Phe Pro Leu	
30 35 40	
cct ccc cct ccc cca tcc tca tca gct tgg cca tgg cag ggc tgg ggg	314
Pro Pro Pro Pro Pro Ser Ser Ser Ala Trp Pro Trp Gln Gly Trp Gly	
45 50 55 60	
atc aga ggt gaa cag gaa gca gaa gga ccc ctg ggg gag aca ggg cct	362
Ile Arg Gly Glu Gln Glu Ala Glu Gly Pro Leu Gly Glu Thr Gly Pro	
65 70 75	
cca gtg gga cca gag ctg agt ggc ctc agg cag tgg cgg aag ctg att	410
Pro Val Gly Pro Glu Leu Ser Gly Leu Arg Gln Trp Arg Lys Leu Ile	
80 85 90	
aaa gga agg tac ggg gag tgg agg gga agt gga caa aag aca gga cag	458

Lys Gly Arg Tyr Gly Glu Trp Arg Gly Ser Gly Gln Lys Thr Gly Gln
 95 100 105

cca tct tag acaacaa tgcaaggggg agaaactgaa gaaaacagaa cagagaccac 514
 Pro Ser *
 110

tactggcaat aaacagagag aaagtgaagc cccatgggtg aggcacacct acattactta 574

agaaacgtga gcacattctt acgcctaggg caataaatac atccttgagc tacacaggct 634

aagcaagagt gaaattacag cac 657

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cttctgtctg gttctctctc tccagaaggt tctgcgggtt cccccagctc tgggtacctg 180

gctctgcac gcgtcgcc atg atg ggc cat cgt cca gtg ctg gtg ctg agc 231
 Met Met Gly His Arg Pro Val Leu Val Leu Ser
 1 5 10

cag aac aca aag cgt gaa tcc gga aga aaa gtt caa tct gga aac atc 279
 Gln Asn Thr Lys Arg Glu Ser Gly Arg Lys Val Gln Ser Gly Asn Ile
 15 20 25

aat gct gcc aag act att gca gat atc atc cga aca tgt ttg gga ccc 327
 Asn Ala Ala Lys Thr Ile Ala Asp Ile Ile Arg Thr Cys Leu Gly Pro
 30 35 40

aag tcc atg atg aag atg ctt ttg gac cca atg gga ggc att gtg atg 375
 Lys Ser Met Met Lys Met Leu Leu Asp Pro Met Gly Gly Ile Val Met
 45 50 55

acc aat gat ggc aat gcc att ctt cga gag att caa gtc cag cat cca 423
 Thr Asn Asp Gly Asn Ala Ile Leu Arg Glu Ile Gln Val Gln His Pro
 60 65 70 75

gcg gcc aag tcc atg atc gaa att agc cgg acc cag gat gaa gag gtt 471
 Ala Ala Lys Ser Met Ile Glu Ile Ser Arg Thr Gln Asp Glu Glu Val
 80 85 90

gga gat ggg acc aca tca gta att att ctt gca ggg gaa atg ctg tct 519
 Gly Asp Gly Thr Thr Ser Val Ile Ile Leu Ala Gly Glu Met Leu Ser
 95 100 105

gta gct gag cac ttc ctg gag cag cag atg cac cca aca gtg gtg atc 567
 Val Ala Glu His Phe Leu Glu Gln Gln Met His Pro Thr Val Val Ile
 110 115 120

agt gct tac cgc aag gca ttg gat gat atg atc agc acc cta aag aaa	615
Ser Ala Tyr Arg Lys Ala Leu Asp Asp Met Ile Ser Thr Leu Lys Lys	
125 130 135	
ata agt atc cca gtc gac atc agt gac agt gat atg atg ctg aac atc	663
Ile Ser Ile Pro Val Asp Ile Ser Asp Ser Asp Met Met Leu Asn Ile	
140 145 150 155	
atc aac agc tct att act acc aaa gcc atc agt cgg tgg tca tct ttg	711
Ile Asn Ser Ser Ile Thr Thr Lys Ala Ile Ser Arg Trp Ser Ser Leu	
160 165 170	
gct tgc aac att gcc ctg gat gct gtc aag atg gta cag ttt gag gag	759
Ala Cys Asn Ile Ala Leu Asp Ala Val Lys Met Val Gln Phe Glu Glu	
175 180 185	
aat ggt cgg aaa gag att gac ata aaa aaa tat gca aga gtg gaa aag	807
Asn Gly Arg Lys Glu Ile Asp Ile Lys Lys Tyr Ala Arg Val Glu Lys	
190 195 200	
ata cct gga ggc atc att gaa gac tcc tgt gtc ttg cgt gga gtc atg	855
Ile Pro Gly Gly Ile Ile Glu Asp Ser Cys Val Leu Arg Gly Val Met	
205 210 215	
att aac aag gat gtg acc cat cca cgt atg cgg cgc tat atc aag aac	903
Ile Asn Lys Asp Val Thr His Pro Arg Met Arg Arg Tyr Ile Lys Asn	
220 225 230 235	
cct cgc att gtg ctg ctg gat tct tct ctg gaa tac aag aaa gga gaa	951
Pro Arg Ile Val Leu Leu Asp Ser Ser Leu Glu Tyr Lys Lys Gly Glu	
240 245 250	
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Ser Gln Thr Asp Ile Glu Ile Thr Arg Glu Glu Asp Phe Thr Arg Ile	
255 260 265	
ctc cag atg gag gaa gag tac atc cag cag ctc tgt gag gac att atc	1047
Leu Gln Met Glu Glu Glu Tyr Ile Gln Gln Leu Cys Glu Asp Ile Ile	
270 275 280	
caa ctg aag ccc gat gtg gtc atc act gaa aag ggc atc tca gat tta	1095
Gln Leu Lys Pro Asp Val Val Ile Thr Glu Lys Gly Ile Ser Asp Leu	
285 290 295	
gct cag cac tac ctt atg cgg gcc aat atc aca gcc atc cgc aga gtc	1143
Ala Gln His Tyr Leu Met Arg Ala Asn Ile Thr Ala Ile Arg Arg Val	
300 305 310 315	
cgg aag aca gac aat aat cgc att gct aga gcc tgt ggg gcc cgg ata	1191
Arg Lys Thr Asp Asn Asn Arg Ile Ala Arg Ala Cys Gly Ala Arg Ile	
320 325 330	
gtc agc cga cca gag gaa ctg aga gaa gat gat gtt gga aca gga gca	1239
Val Ser Arg Pro Glu Glu Leu Arg Glu Asp Asp Val Gly Thr Gly Ala	
335 340 345	
ggc ctg ttg gaa atc aag aaa att gga gat gaa tac ttt act ttc atc	1287
Gly Leu Leu Glu Ile Lys Lys Ile Gly Asp Glu Tyr Phe Thr Phe Ile	
350 355 360	
act gac tgc aaa gac ccc aag gcc tgc acc att ctc ctc cgg ggg gct	1335
Thr Asp Cys Lys Asp Pro Lys Ala Cys Thr Ile Leu Leu Arg Gly Ala	
365 370 375	

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agc aaa gag att ctc tcg gaa gta gaa cgc aac ctc cag gat gcc atg      1383
Ser Lys Glu Ile Leu Ser Glu Val Glu Arg Asn Leu Gln Asp Ala Met
380                               385                               390                               395

caa gtg tgt cgc aat gtt ctc ctg gac cct cag ctg gtg cca ggg ggt      1431
Gln Val Cys Arg Asn Val Leu Leu Asp Pro Gln Leu Val Pro Gly Gly
                               400                               405                               410

ggg gcc tcc gag atg gct gtg gcc cat gcc ttg aca gaa aaa tcc aag      1479
Gly Ala Ser Glu Met Ala Val Ala His Ala Leu Thr Glu Lys Ser Lys
                               415                               420                               425

gcc atg act ggt gtg gaa caa tgg cca tac agg gct gtt gcc cag gcc      1527
Ala Met Thr Gly Val Glu Gln Trp Pro Tyr Arg Ala Val Ala Gln Ala
                               430                               435                               440

cta gag gtc att cct cgt acc ctg atc cag aac tgt ggg gcc agc acc      1575
Leu Glu Val Ile Pro Arg Thr Leu Ile Gln Asn Cys Gly Ala Ser Thr
                               445                               450                               455

atc cgt cta ctt acc tcc ctt cgg gcc aag cac acc cag gag aac tgt      1623
Ile Arg Leu Leu Thr Ser Leu Arg Ala Lys His Thr Gln Glu Asn Cys
460                               465                               470                               475

gag acc tgg ggt gta aat ggt gag acg ggt act ttg gtg gac atg aag      1671
Glu Thr Trp Gly Val Asn Gly Glu Thr Gly Thr Leu Val Asp Met Lys
                               480                               485                               490

gaa ctg ggc ata tgg gag cca ttg gct gtg aag ctg cag act tat aag      1719
Glu Leu Gly Ile Trp Glu Pro Leu Ala Val Lys Leu Gln Thr Tyr Lys
                               495                               500                               505

aca gca gtg gag acg gca gtt ctg cta ctg cga att gat gac atc gtt      1767
Thr Ala Val Glu Thr Ala Val Leu Leu Leu Arg Ile Asp Asp Ile Val
                               510                               515                               520

tca ggc cac aaa aag aaa ggc gat gac cag agc cgg caa ggc ggg gct      1815
Ser Gly His Lys Lys Lys Gly Asp Asp Gln Ser Arg Gln Gly Gly Ala
                               525                               530                               535

cct gat gct ggc cag gag tga gt gctaggcaag gctacttcaa tgcacagaac      1868
Pro Asp Ala Gly Gln Glu *
540                               545

cagcagagtc tcccccttttc ctgagccaga gtgccaggaa cactgtggac gtctttgttc      1928

agaagggatc aggttggggg gcagcccccga gtccctttct gtcccagctc agttttccaa      1988

aagacactga catgtaattc ttctctattg taaggtttcc atttagtttg cttccgatga      2048

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gacgcctaac cccgcgagaa ccttgcaaatt tttcttcctc ataattggga gaagactcac	180
tggccga atg gca gca gta gat gac ttg caa ttt gaa gaa ttt ggc aat	229
Met Ala Ala Val Asp Asp Leu Gln Phe Glu Glu Phe Gly Asn	
1 5 10	
gca gcc act tct ctg aca gca aac cca gat gcc acc aca gta aac att	277
Ala Ala Thr Ser Leu Thr Ala Asn Pro Asp Ala Thr Thr Val Asn Ile	
15 20 25 30	
gag gat cct ggt gaa acc cca aaa cat cag cca gga tcc cca aga ggc	325
Glu Asp Pro Gly Glu Thr Pro Lys His Gln Pro Gly Ser Pro Arg Gly	
35 40 45	
tca gga aga gaa gaa gat gat gag tta ctg gga aat gat gac tct gac	373
Ser Gly Arg Glu Glu Asp Asp Glu Leu Leu Gly Asn Asp Asp Ser Asp	
50 55 60	
aaa act gag tta ctt gct gga cag aag aaa agc tcc ccc ttc tgg aca	421
Lys Thr Glu Leu Leu Ala Gly Gln Lys Lys Ser Ser Pro Phe Trp Thr	
65 70 75	
ttt gaa tac tac caa aca ttc ttt gat gtg gac acc tac cag gtc ttt	469
Phe Glu Tyr Tyr Gln Thr Phe Phe Asp Val Asp Thr Tyr Gln Val Phe	
80 85 90	
gac aga att aaa gga tct ctt ttg cca ata ccc ggg aaa aac ttt gtg	517
Asp Arg Ile Lys Gly Ser Leu Leu Pro Ile Pro Gly Lys Asn Phe Val	
95 100 105 110	
agg tta tat atc cgc agc aat cca gat ctc tat ggc ccc ttt tgg ata	565
Arg Leu Tyr Ile Arg Ser Asn Pro Asp Leu Tyr Gly Pro Phe Trp Ile	
115 120 125	
tgt gcc acg ttg gtc ttt gcc ata gca att agt ggg aat ctt tcc aac	613
Cys Ala Thr Leu Val Phe Ala Ile Ala Ile Ser Gly Asn Leu Ser Asn	
130 135 140	
ttc ttg atc cat ctg gga gag aag acg tac cat tat gtg ccc gaa ttc	661
Phe Leu Ile His Leu Gly Glu Lys Thr Tyr His Tyr Val Pro Glu Phe	
145 150 155	
cga aaa gtg tcc ata gca gct acc atc atc tat gcc tat gcc tgg ctg	709
Arg Lys Val Ser Ile Ala Ala Thr Ile Ile Tyr Ala Tyr Ala Trp Leu	
160 165 170	
gtt cct ctt gca ctc tgg ggt ttc ctc atg tgg aga aac agc aaa gtt	757
Val Pro Leu Ala Leu Trp Gly Phe Leu Met Trp Arg Asn Ser Lys Val	
175 180 185 190	
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Met Asn Ile Val Ser Tyr Ser Phe Leu Glu Ile Val Cys Val Tyr Gly	
195 200 205	
tat tcc ctc ttc att tat atc ccc acc gca ata ctg tgg att atc ccc	853
Tyr Ser Leu Phe Ile Tyr Ile Pro Thr Ala Ile Leu Trp Ile Ile Pro	
210 215 220	
cag aaa gct gtt cgt tgg att cta gtc atg att gcc ctg ggc atc tca	901

Gln Lys Ala Val Arg Trp Ile Leu Val Met Ile Ala Leu Gly Ile Ser
 225 230 235

gga tct ctc ttg gca atg aca ttt tgg cca gct gtt cgt gag gat aac 949
 Gly Ser Leu Leu Ala Met Thr Phe Trp Pro Ala Val Arg Glu Asp Asn
 240 245 250

cga cgc gtt gca ttg gcc aca att gtg aca att gtg ttg ctc cat atg 997
 Arg Arg Val Ala Leu Ala Thr Ile Val Thr Ile Val Leu Leu His Met
 255 260 265 270

ctg ctt tct gtg ggc tgc ttg gca tac ttt ttt gat gca cca gag atg 1045
 Leu Leu Ser Val Gly Cys Leu Ala Tyr Phe Phe Asp Ala Pro Glu Met
 275 280 285

gac cat ctc cca aca act aca gct act cca aac caa aca gtt gct gca 1093
 Asp His Leu Pro Thr Thr Thr Ala Thr Pro Asn Gln Thr Val Ala Ala
 290 295 300

gcc aag tcc agc taa tgaggaaaga ctcacttgag ataccctctc cttgctgaag 1148
 Ala Lys Ser Ser *
 305

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tgccaccaca gtcaaatgac atgcttcact gtggtacctt aatacctgaa atagaaccat 1508

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 Met Thr Ala His Ser Phe Ala Leu Pro
 1 5

gtc atc atc ttc acc acg ttc tgg ggc ctc gtc ggc atc gcc ggg ccc 160
 Val Ile Ile Phe Thr Thr Phe Trp Gly Leu Val Gly Ile Ala Gly Pro

10	15	20	25	
tgg ttc gtg ccg aag gga ccc aac cgc gga gtg atc atc acc atg ctg				208
Trp Phe Val Pro Lys Gly Pro Asn Arg Gly Val Ile Ile Thr Met Leu				
	30	35	40	
gtc gcc acc gcc gtc tgc tgt tac ctc ttc tgg ctc atc gcc atc ctg				256
Val Ala Thr Ala Val Cys Cys Tyr Leu Phe Trp Leu Ile Ala Ile Leu				
	45	50	55	
gcg cag ctg aac ccc ctg ttc ggg ccc cag ctg aag aat gag acc atc				304
Ala Gln Leu Asn Pro Leu Phe Gly Pro Gln Leu Lys Asn Glu Thr Ile				
	60	65	70	
tgg tac gtg cgc ttc ctg tgg gag tga cccgc cgcccccgac ccaggtgccc				356
Trp Tyr Val Arg Phe Leu Trp Glu *				
	75	80		
agctctcgga atgactgtgg ctccactgtc cctgacaacc ccttcgtccg gacctcccc				416
cacacaacta tgtctgggtca ccagctccct cctgctggca ccagagacc cggaccgcga				476
gggcctgcct ggttcctgga agtcttccca gtcttcccag ccagcccggg ccctggggag				536
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ccctttgctg tgtctcctca gagtatcctg ttccgcctcc tgccacctgg acctccctca				1016
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tgagcctccg tcgccccctc tgttgggtaa ggggtgtgag tgtgacttgt gctgaaaacc				1676
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 Gln Thr Gln Lys Lys Arg Ser Leu Glu Asp Pro Asn Ser Arg Pro Arg
 15 20 25 30

cga ccg cgg tct atg gct gcg act tct cta atg tct gct ttg gct gcc 143
 Arg Pro Arg Ser Met Ala Ala Thr Ser Leu Met Ser Ala Leu Ala Ala
 35 40 45

cgg ctg ctg cag ccc gcg cac agc tgc tcc ctt cgc ctt cgc cct ttc 191
 Arg Leu Leu Gln Pro Ala His Ser Cys Ser Leu Arg Leu Arg Pro Phe
 50 55 60

cac ctc gcg gca gtt cga aat gaa gct gtt gtc att tct gga agg aaa 239
 His Leu Ala Ala Val Arg Asn Glu Ala Val Val Ile Ser Gly Arg Lys
 65 70 75

ctg gcc cag cag atc aag cag gaa gtg cgg cag gag gta gaa gag tgg 287
 Leu Ala Gln Gln Ile Lys Gln Glu Val Arg Gln Glu Val Glu Glu Trp
 80 85 90

gtg gcc tca ggc aac aaa cgg cca cac ctg agt gtg atc ctg gtt ggc 335
 Val Ala Ser Gly Asn Lys Arg Pro His Leu Ser Val Ile Leu Val Gly
 95 100 105 110

gag aat cct gca agt cac tcc tat gtc ctc aac aaa acc agg gca gct 383
 Glu Asn Pro Ala Ser His Ser Tyr Val Leu Asn Lys Thr Arg Ala Ala
 115 120 125

gca gtt gtg gga atc aac agt gag aca att atg aaa cca gct tca att 431
 Ala Val Val Gly Ile Asn Ser Glu Thr Ile Met Lys Pro Ala Ser Ile
 130 135 140

tca gag gaa gaa ttg ttg aat tta atc aat aaa ctg aat aat gat gat 479
 Ser Glu Glu Glu Leu Leu Asn Leu Ile Asn Lys Leu Asn Asn Asp Asp
 145 150 155

aat gta gat ggc ctc ctt gtt cag ttg cct ctt cca gag cat att gat 527
 Asn Val Asp Gly Leu Leu Val Gln Leu Pro Leu Pro Glu His Ile Asp
 160 165 170

gag aga agg atc tgc aat gct gtt tct cca gac aag gat gtt gat ggc 575
 Glu Arg Arg Ile Cys Asn Ala Val Ser Pro Asp Lys Asp Val Asp Gly
 175 180 185 190

ttt cat gta att aat gta gga cga atg tgt ttg gat cag tat tcc atg 623
 Phe His Val Ile Asn Val Gly Arg Met Cys Leu Asp Gln Tyr Ser Met
 195 200 205

tta ccg gct act cca tgg ggt gtg tgg gaa ata atc aag cga act ggc Leu Pro Ala Thr Pro Trp Gly Val Trp Glu Ile Ile Lys Arg Thr Gly 210 215 220	671
att cca acc cta ggg aag aat gtg gtt gtg gct gga agg tca aaa aac Ile Pro Thr Leu Gly Lys Asn Val Val Val Ala Gly Arg Ser Lys Asn 225 230 235	719
gtt gga atg ccc att gca atg tta ctg cac aca gat ggg gcg cat gaa Val Gly Met Pro Ile Ala Met Leu Leu His Thr Asp Gly Ala His Glu 240 245 250	767
cgt ccc gga ggt gat gcc act gtt aca ata tct cat cga tat act ccc Arg Pro Gly Gly Asp Ala Thr Val Thr Ile Ser His Arg Tyr Thr Pro 255 260 265 270	815
aaa gag cag ttg aag aaa cat aca att ctt gca gat att gta ata tct Lys Glu Gln Leu Lys Lys His Thr Ile Leu Ala Asp Ile Val Ile Ser 275 280 285	863
gct gca ggt att cca aat ctg atc aca gca gat atg atc aag gaa gga Ala Ala Gly Ile Pro Asn Leu Ile Thr Ala Asp Met Ile Lys Glu Gly 290 295 300	911
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Met Ala Ala Pro Ala
1 5
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Gln Gln Thr Thr Gln Pro Gly Gly Gly Lys Arg Lys Gly Lys Ala Gln
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Tyr Val Leu Ala Lys Arg Ala Arg Arg Cys Asp Ala Gly Gly Pro Arg
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Glu Arg Lys Cys Val Glu Glu Ala Tyr Ser Leu Leu Asn Glu Tyr Gly
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Asp Asp Met Tyr Gly Pro Glu Lys Phe Thr Asp Lys Asp Gln Gln Pro
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Ser Gly Ser Glu Gly Glu Asp Asp Asp Ala Glu Ala Ala Leu Lys Lys
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Arg Ala Asp Glu Ile Lys Asp Ala Ile Tyr Val Thr Met Glu Ile Leu
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Ser Asn Trp Gly Asn Ser Trp Trp Val Gly Leu Thr Glu Val Glu Phe
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Phe Asp Leu Asn Asp Thr Lys Leu Tyr Val Ser Pro His Asp Val Asp
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Ile Arg Asn Thr Ala Thr Pro Gly Glu Leu Gly Arg Leu Val Asn Arg
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Asn Leu Ala Gly Lys Lys Asp Ser Ser Pro Trp Thr Cys Pro Phe His
70 75 80
cca cca ctc cag ctg ttt ttt gtt att cga aac aca aga cag ctg ggg 406
Pro Pro Leu Gln Leu Phe Phe Val Ile Arg Asn Thr Arg Gln Leu Gly
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Asp Phe His Leu Ala Lys Ile Lys Val Arg Asn Tyr Trp Thr Ala Asp
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115 120 125
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Asn Leu Ile Phe Asn Gly Lys Leu Asp Lys Gly Asp Arg Glu Ala Pro
130 135 140 145
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150 155 160
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1715

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agccagcgaa atg gca gcc aca ctc gat ttg aaa tca aag gag gag aag 169
Met Ala Ala Thr Leu Asp Leu Lys Ser Lys Glu Glu Lys
1 5 10
gat gct gag ttg gac aag agg atc gag gct ctt cgg cgg aag aat gag 217
Asp Ala Glu Leu Asp Lys Arg Ile Glu Ala Leu Arg Arg Lys Asn Glu
15 20 25
gcc ctc atc cgg cgc tac cag gag att gag gaa gac cgt aag aaa gct 265
Ala Leu Ile Arg Arg Tyr Gln Glu Ile Glu Glu Asp Arg Lys Lys Ala
30 35 40 45
gaa ctt gag gga gtc gca gtc aca gct ccc cga aag ggc cgc tca gtg 313
Glu Leu Glu Gly Val Ala Val Thr Ala Pro Arg Lys Gly Arg Ser Val
50 55 60
gag aag gag aac gtg gca gtg gag tcg gag aag aac ctg ggt cct tcc 361
Glu Lys Glu Asn Val Ala Val Glu Ser Glu Lys Asn Leu Gly Pro Ser
65 70 75
cgg agg tct cct ggg acc cct cgg ccc cca ggg gcc agc aag ggg ggc 409
Arg Arg Ser Pro Gly Thr Pro Arg Pro Pro Gly Ala Ser Lys Gly Gly
80 85 90
cgg act cct cca cag cag gga ggc cgg gcc ggc atg ggc cga gca tcg 457
Arg Thr Pro Pro Gln Gln Gly Gly Arg Ala Gly Met Gly Arg Ala Ser
95 100 105
cgc agc tgg gag ggc agc ccc ggg gag cag cct cga gga gga gga gct 505
Arg Ser Trp Glu Gly Ser Pro Gly Glu Gln Pro Arg Gly Gly Gly Ala
110 115 120 125
ggg ggc cgt ggc cgg agg ggc cgg ggc cga ggt tca cct cac ctc tct 553
Gly Gly Arg Gly Arg Arg Gly Arg Gly Arg Gly Ser Pro His Leu Ser
130 135 140
gga gct gga gac acc tca atc tct gac cgt aaa tcc aag gag tgg gag 601
Gly Ala Gly Asp Thr Ser Ile Ser Asp Arg Lys Ser Lys Glu Trp Glu
145 150 155
gag cgg cgc agg cag aac att gag aag atg aat gag gag atg gag aag 649
Glu Arg Arg Arg Gln Asn Ile Glu Lys Met Asn Glu Glu Met Glu Lys
160 165 170
atc gcc gag tat gag cgc aac cag cgg gaa ggg gtt ctt gaa ccc aac 697
Ile Ala Glu Tyr Glu Arg Asn Gln Arg Glu Gly Val Leu Glu Pro Asn
175 180 185
cca gtg cgg aac ttc ctg gac gac ccc cgg cga cgc agc ggg ccc ctg 745
Pro Val Arg Asn Phe Leu Asp Asp Pro Arg Arg Arg Ser Gly Pro Leu
190 195 200 205
gag gag tct gag cgg gac cgc cgg gag gag agc cgc cgg cac ggc cgc 793
Glu Glu Ser Glu Arg Asp Arg Arg Glu Glu Ser Arg Arg His Gly Arg
210 215 220
aac tgg ggg ggc ccc gac ttc gag cgg gtg cgc tgt ggc ctt gag cac 841
Asn Trp Gly Gly Pro Asp Phe Glu Arg Val Arg Cys Gly Leu Glu His
225 230 235
gag cgg cag ggc cgc cga gct ggc ctg ggc agt gct gga gac atg acg 889
Glu Arg Gln Gly Arg Arg Ala Gly Leu Gly Ser Ala Gly Asp Met Thr

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ttg tcc atg acg ggc cgg gag cgg tcc gag tac ctg cgc tgg aag cag Leu Ser Met Thr Gly Arg Glu Arg Ser Glu Tyr Leu Arg Trp Lys Gln 255 260 265			937
gag agg gag aag atc gac cag gag cgg ctg cag agg cac cgc aag ccc Glu Arg Glu Lys Ile Asp Gln Glu Arg Leu Gln Arg His Arg Lys Pro 270 275 280 285			985
act ggc cag tgg agg cgc gag tgg gat gcc gag aag acc gat ggg atg Thr Gly Gln Trp Arg Arg Glu Trp Asp Ala Glu Lys Thr Asp Gly Met 290 295 300			1033
ttc aag gat ggc cca gtc cct gcc cat gaa cca tcc cac cgc tat gat Phe Lys Asp Gly Pro Val Pro Ala His Glu Pro Ser His Arg Tyr Asp 305 310 315			1081
gac cag gcc tgg gcc cgg ccc ccg aag ccc cct act ttt ggg gag ttc Asp Gln Ala Trp Ala Arg Pro Pro Lys Pro Pro Thr Phe Gly Glu Phe 320 325 330			1129
ctg tcc cag cac aaa gct gag gcc agc agc cgc aga agg aga aag agc Leu Ser Gln His Lys Ala Glu Ala Ser Ser Arg Arg Arg Arg Lys Ser 335 340 345			1177
agt cgg ccc cag gcc aag gca gcg ccc agg gcc tac agt gac cat gat Ser Arg Pro Gln Ala Lys Ala Ala Pro Arg Ala Tyr Ser Asp His Asp 350 355 360 365			1225
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cca cag cct act tcc ccc gag act tcc ccc aag gag aca ccc atg cag Pro Gln Pro Thr Ser Pro Glu Thr Ser Pro Lys Glu Thr Pro Met Gln 385 390 395			1321
cca ccc gag atc cca gct cct gcc cac cgg cct cct gaa gac gag ggg Pro Pro Glu Ile Pro Ala Pro Ala His Arg Pro Pro Glu Asp Glu Gly 400 405 410			1369
gaa gag aat gag ggg gaa gag gat gaa gaa tgg gag gac ata agt gag Glu Glu Asn Glu Gly Glu Glu Asp Glu Glu Trp Glu Asp Ile Ser Glu 415 420 425			1417
gat gag gaa gag gag gag atc gag gtg gaa gaa ggt gat gag gag gaa Asp Glu Glu Glu Glu Glu Ile Glu Val Glu Glu Gly Asp Glu Glu Glu 430 435 440 445			1465
cca gcc caa gac cac caa gcc cca gag gct gcc ccc acc ggg atc ccc Pro Ala Gln Asp His Gln Ala Pro Glu Ala Ala Pro Thr Gly Ile Pro 450 455 460			1513
tgc agt gag cag gcc cac gga gtc ccc ttc agt ccg gag gag ccc ctg Cys Ser Glu Gln Ala His Gly Val Pro Phe Ser Pro Glu Glu Pro Leu 465 470 475			1561
ctg gag ccc cag gcc cct ggc acg cct tcc agc cct ttc tca cca ccc Leu Glu Pro Gln Ala Pro Gly Thr Pro Ser Ser Pro Phe Ser Pro Pro 480 485 490			1609
agc ggc cac cag cct gtg tcc gat tgg ggt gaa gag gtg gag ctg aat Ser Gly His Gln Pro Val Ser Asp Trp Gly Glu Glu Val Glu Leu Asn			1657

495	500	505	
tct ccc cgg acc act cac ctg gct ggc gcc ctc tcc ccg ggt gag gcc			1705
Ser Pro Arg Thr Thr His Leu Ala Gly Ala Leu Ser Pro Gly Glu Ala			
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tgg cct ttt gag agt gta tga ag ctggctgcct gtgtgtgtgt gtgtgtgtgt			1758
Trp Pro Phe Glu Ser Val *			
530			
gtgtgtgtgt gtgtgtgtgc gcgcgcgcgc gcgcgcgcgc gcgctagagg ggtgtggctg			1818
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Met Ala Asp Phe Asp Thr Tyr Asp Asp Arg Ala Tyr Ser Ser Phe Gly			
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Gly Gly Arg Gly Ser Arg Gly Ser Ala Gly Gly His Gly Ser Arg Ser			
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cag aag gag ttg ccc aca gag ccc ccc tac aca gca tac gta gga aat			264
Gln Lys Glu Leu Pro Thr Glu Pro Pro Tyr Thr Ala Tyr Val Gly Asn			
35 40 45			
cta cct ttc aat acg gtt cag ggc gac ata gat gct atc ttt aag gat			312
Leu Pro Phe Asn Thr Val Gln Gly Asp Ile Asp Ala Ile Phe Lys Asp			
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Leu Ser Ile Arg Ser Val Arg Leu Val Arg Asp Lys Asp Thr Asp Lys			
65 70 75 80			
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Phe Lys Gly Phe Cys Tyr Val Glu Phe Asp Glu Val Asp Ser Leu Lys			
85 90 95			
gaa gcc ttg aca tac gat ggt gca ctg ttg ggc gat cgg tca ctt cgt			456
Glu Ala Leu Thr Tyr Asp Gly Ala Leu Leu Gly Asp Arg Ser Leu Arg			
100 105 110			
gtg gac att gca gaa ggc aga aaa caa gat aaa ggt ggc ttt gga ttc			504

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Arg	Lys	Gly	Gly	Pro	Asp	Asp	Arg	Gly	Phe	Arg	Asp	Asp	Phe	Leu	Gly		
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Phe	Arg	Glu	Pro	Thr	Glu	Glu	Glu	Arg	Ala	Gln	Arg	Pro	Arg	Leu	Gln		
			180					185					190				
ctt	aaa	cct	cga	aca	gtc	gcg	acg	ccc	ctc	aat	caa	gta	gcc	aat	ccc	744	
Leu	Lys	Pro	Arg	Thr	Val	Ala	Thr	Pro	Leu	Asn	Gln	Val	Ala	Asn	Pro		
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Asn	Ser	Ala	Ile	Phe	Gly	Gly	Ala	Arg	Pro	Arg	Glu	Glu	Val	Val	Gln		
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Lys	Glu	Gln	Glu	*													
225																	
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<210> 618
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<213> Homo sapiens

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<222> (121) .. (867)

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atg gcg gac ttc gac acc tac gac gat cgg gcc tac agc agc ttc ggc 168
Met Ala Asp Phe Asp Thr Tyr Asp Asp Arg Ala Tyr Ser Ser Phe Gly
 1 5 10 15
ggc ggc aga ggg tcc cgc ggc agt gct ggt ggc cat ggt tcc cgt agc 216
Gly Gly Arg Gly Ser Arg Gly Ser Ala Gly Gly His Gly Ser Arg Ser
 20 25 30
cag aag gag ttg ccc aca gag ccc ccc tac aca gca tac gta gga aat 264
Gln Lys Glu Leu Pro Thr Glu Pro Pro Tyr Thr Ala Tyr Val Gly Asn
 35 40 45
cta cct ttc aat acg gtt cag ggc gac ata gat gct atc ttt aag gat 312
Leu Pro Phe Asn Thr Val Gln Gly Asp Ile Asp Ala Ile Phe Lys Asp
 50 55 60
ctc agc ata agg agt gta cgg cta gtc aga gac aaa gac aca gat aaa 360
Leu Ser Ile Arg Ser Val Arg Leu Val Arg Asp Lys Asp Thr Asp Lys
 65 70 75 80

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ttt aaa gga ttc tgc tat gta gaa ttc gat gaa gtg gat tcc ctt aag	408
Phe Lys Gly Phe Cys Tyr Val Glu Phe Asp Glu Val Asp Ser Leu Lys	
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Glu Ala Leu Thr Tyr Asp Gly Ala Leu Leu Gly Asp Arg Ser Leu Arg	
100 105 110	
gtg gac att gca gaa ggc aga aaa caa gat aaa ggt ggc ttt gga ttc	504
Val Asp Ile Ala Glu Gly Arg Lys Gln Asp Lys Gly Gly Phe Gly Phe	
115 120 125	
aga aaa ggt gga cca gat gac aga gga atg ggt agc tct cga gaa tct	552
Arg Lys Gly Gly Pro Asp Asp Arg Gly Met Gly Ser Ser Arg Glu Ser	
130 135 140	
aga ggt gga tgg gat tcc cgg gat gac ttc aat tct ggc ttc agg gat	600
Arg Gly Gly Trp Asp Ser Arg Asp Asp Phe Asn Ser Gly Phe Arg Asp	
145 150 155 160	
gac ttc tta ggg ggc agg gga ggt agt cgc cca ggc gac cgg cga aca	648
Asp Phe Leu Gly Gly Arg Gly Gly Ser Arg Pro Gly Asp Arg Arg Thr	
165 170 175	
ggc ccc ccc atg ggc agc cgc ttc aga gat ggc cct ccc ctc cgt gga	696
Gly Pro Pro Met Gly Ser Arg Phe Arg Asp Gly Pro Pro Leu Arg Gly	
180 185 190	
tcc aac atg gat ttc aga gaa ccc aca gaa gag gaa aga gca cag aga	744
Ser Asn Met Asp Phe Arg Glu Pro Thr Glu Glu Glu Arg Ala Gln Arg	
195 200 205	
cca cga ctc cag ctt aaa cct cga aca gtc gcg acg ccc ctc aat caa	792
Pro Arg Leu Gln Leu Lys Pro Arg Thr Val Ala Thr Pro Leu Asn Gln	
210 215 220	
gta gcc aat ccc aac tct gct atc ttc ggg ggt gcc agg cct aga gag	840
Val Ala Asn Pro Asn Ser Ala Ile Phe Gly Gly Ala Arg Pro Arg Glu	
225 230 235 240	
gaa gtc gtt caa aag gag caa gaa tga gcctg cgggtgggag ggaatggggc	892
Glu Val Val Gln Lys Glu Gln Glu *	
245	
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<212> DNA
<213> Homo sapiens

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<221> CDS
<222> (399) .. (686)

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cgactttttt tttttttttt aattcttcag ctaaaacagc ggaagagggtg atttattata 180
tggttggttac actcggccac aaataaacac agaaatagtc cagaatgtca caggccagg 240
gcagaggacc aacatgggca ttttgtttat gagcaagggtg ggtctcagag gtgatcggcg 300
atcagagggc gatgaagttc tagatccatt gagacaagct ctagacagta gcatgcagtc 360

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<210> 620
<211> 1668
<212> DNA
<213> Homo sapiens
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<220>  
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<222> (187) .. (1236)
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atccactagt ccagtgtggt ggaattccct ccgccacatc ctccacctct cttgggtccag      120
cgagcgttgc cgggccaggg tcaagcggag ggctccgacg gcgcggacgg agcgaagcgc      180
cgagcc      atg gcg cac caa acg ggc atc cac gcc acg gaa gag ctg aag      228
             Met Ala His Gln Thr Gly Ile His Ala Thr Glu Glu Leu Lys
               1               5               10

gaa ttc ttt gcc aag gca cgg gct ggc tct gtg cgg ctc atc aag gtt      276
Glu Phe Phe Ala Lys Ala Arg Ala Gly Ser Val Arg Leu Ile Lys Val

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15	20	25	30	
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Val Ile Glu Asp Glu Gln Leu Val Leu Gly Ala Ser Gln Glu Pro Val				
	35	40	45	
ggc cgc tgg gat cag gac tat gac agg gcc gtg ctg cca ctg ctg gac				372
Gly Arg Trp Asp Gln Asp Tyr Asp Arg Ala Val Leu Pro Leu Leu Asp				
	50	55	60	
gcc cag cag ccc tgc tac ctg ctc tac cgc ctc gac tca cag aat gct				420
Ala Gln Gln Pro Cys Tyr Leu Leu Tyr Arg Leu Asp Ser Gln Asn Ala				
	65	70	75	
cag ggc ttc gaa tgg ctc ttc ctc gcc tgg tcg cct gat aac tcc ccc				468
Gln Gly Phe Glu Trp Leu Phe Leu Ala Trp Ser Pro Asp Asn Ser Pro				
	80	85	90	
gtg cgg ctg aag atg ctg tac gcg gcc acg cgg gcc aca gtg aaa aag				516
Val Arg Leu Lys Met Leu Tyr Ala Ala Thr Arg Ala Thr Val Lys Lys				
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gag ttt gga ggt ggc cac atc aag gat gag ctc ttc ggg act gtg aag				564
Glu Phe Gly Gly Gly His Ile Lys Asp Glu Leu Phe Gly Thr Val Lys				
	115	120	125	
gat gac ctc tct ttt gct ggg tac cag aaa cac ctg tcg tcc tgt gcg				612
Asp Asp Leu Ser Phe Ala Gly Tyr Gln Lys His Leu Ser Ser Cys Ala				
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gca cct gcc ccg ctg acc tcg gct gag aga gag ctc cag cag atc cgc				660
Ala Pro Ala Pro Leu Thr Ser Ala Glu Arg Glu Leu Gln Gln Ile Arg				
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att aac gag gtg aag aca gag atc agt gtg gaa agc aag cac cag acc				708
Ile Asn Glu Val Lys Thr Glu Ile Ser Val Glu Ser Lys His Gln Thr				
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ctg cag ggc ctc gcc ttc ccc ctg cag cct gag gcc cag cgg gca ctc				756
Leu Gln Gly Leu Ala Phe Pro Leu Gln Pro Glu Ala Gln Arg Ala Leu				
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cag cag ctc aag cag aaa atg gtc aac tac atc cag atg aag ctg gac				804
Gln Gln Leu Lys Gln Lys Met Val Asn Tyr Ile Gln Met Lys Leu Asp				
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Leu Glu Arg Glu Thr Ile Glu Leu Val His Thr Glu Pro Thr Asp Val				
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Ala Gln Leu Pro Ser Arg Val Pro Arg Asp Ala Ala Arg Tyr His Phe				
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ttc ctc tac aag cac acc cat gag ggc gac ccc ctt gag tct gta gtg				948
Phe Leu Tyr Lys His Thr His Glu Gly Asp Pro Leu Glu Ser Val Val				
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ttc atc tac tcc atg ccg ggg tac aag tgc agc atc aag gag cga atg				996
Phe Ile Tyr Ser Met Pro Gly Tyr Lys Cys Ser Ile Lys Glu Arg Met				
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ctc tac tcc agc tgc aag agc cgc ctc ctc gac tcc gtg gag cag gac				1044
Leu Tyr Ser Ser Cys Lys Ser Arg Leu Leu Asp Ser Val Glu Gln Asp				

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ttc cat ctg gag atc gcc aag aaa att gag att ggc gat ggg gca gag				1092
Phe His Leu Glu Ile Ala Lys Lys Ile Glu Ile Gly Asp Gly Ala Glu				
	290	295	300	
ctg acg gca gag ttc ctc tac gac gag gtg cac ccc aag caa cac gcc				1140
Leu Thr Ala Glu Phe Leu Tyr Asp Glu Val His Pro Lys Gln His Ala				
	305	310	315	
ttc aag cag gcc ttc gcc aag ccc aag ggc cca ggg ggc aag cgg ggc				1188
Phe Lys Gln Ala Phe Ala Lys Pro Lys Gly Pro Gly Gly Lys Arg Gly				
	320	325	330	
cat aag cgc ctc atc cgc ggc ccg ggt gaa aat ggg gat gac agc tag				1236
His Lys Arg Leu Ile Arg Gly Pro Gly Glu Asn Gly Asp Asp Ser *				
	335	340	345	350
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Met Val Leu Leu His Val Leu Phe Glu His	
1 5 10	
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Ala Val Gly Tyr Ala Leu Leu Ala Leu Lys Glu Val Glu Glu Ile Ser	
15 20 25	
ctg ctg cag ccg cag gtg gag gag tcc gtg ctc aac ctg ggc aaa ttc	207
Leu Leu Gln Pro Gln Val Glu Glu Ser Val Leu Asn Leu Gly Lys Phe	

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gtt gcc ttg gaa aat gcc aac gcc gtg tct gaa ggg gtt gtt cat gag Val Ala Leu Glu Asn Ala Asn Ala Val Ser Glu Gly Val Val His Glu 60 65 70			303
gac ctc cgc ctg ctc ttg gag acc cac ctg ccg tcc aaa aag aag aaa Asp Leu Arg Leu Leu Leu Glu Thr His Leu Pro Ser Lys Lys Lys Lys 75 80 85 90			351
gta ctc ttg gga gtt ggg gat ccc aag att ggt gcc gca ata cag gag Val Leu Leu Gly Val Gly Asp Pro Lys Ile Gly Ala Ala Ile Gln Glu 95 100 105			399
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cga gga gtt cgt ctg cac ttc cac aat ctg gtg aag ggt ctg acc gat Arg Gly Val Arg Leu His Phe His Asn Leu Val Lys Gly Leu Thr Asp 125 130 135			495
ctg tca gct tgt aaa gca cag ctg ggg ctg gga cac agc tat tcc cgt Leu Ser Ala Cys Lys Ala Gln Leu Gly Leu Gly His Ser Tyr Ser Arg 140 145 150			543
gcc aaa gtt aag ttt aat gtg aac cgg gtg gac aat atg atc atc cag Ala Lys Val Lys Phe Asn Val Asn Arg Val Asp Asn Met Ile Ile Gln 155 160 165 170			591
tcc att agc ctc ctg gac cag ctg gat aag gac atc aat acc ttc tct Ser Ile Ser Leu Leu Asp Gln Leu Asp Lys Asp Ile Asn Thr Phe Ser 175 180 185			639
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aac cga agg gaa ctg aat gag gac aag ctg gag aag ctg gag gag ctg Asn Arg Arg Glu Leu Asn Glu Asp Lys Leu Glu Lys Leu Glu Glu Leu 220 225 230			783
aca atg gat ggg gcc aag gct aag gct att ctg gat gcc tca cgg tcc Thr Met Asp Gly Ala Lys Ala Lys Ala Ile Leu Asp Ala Ser Arg Ser 235 240 245 250			831
tcc atg ggc atg gac ata tct gcc att gac ttg ata aac atc gag agc Ser Met Gly Met Asp Ile Ser Ala Ile Asp Leu Ile Asn Ile Glu Ser 255 260 265			879
ttc tcc agt cgt gtg gtg tct tta tct gaa tac cgc cag agc cta cac Phe Ser Ser Arg Val Val Ser Leu Ser Glu Tyr Arg Gln Ser Leu His 270 275 280			927
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285	290	295	
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gct gaa aag gcc ctg ttc aga gcc ctg aag aca agg ggt aac act cca Ala Glu Lys Ala Leu Phe Arg Ala Leu Lys Thr Arg Gly Asn Thr Pro 335 340 345			1119
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aag aac aaa ggc cgc atc tcc cga tac ctg gca aac aaa tgc agt att Lys Asn Lys Gly Arg Ile Ser Arg Tyr Leu Ala Asn Lys Cys Ser Ile 365 370 375			1215
gcc tca cga atc gat tgc ttc tct gag gtg ccc acg agt gta ttc ggg Ala Ser Arg Ile Asp Cys Phe Ser Glu Val Pro Thr Ser Val Phe Gly 380 385 390			1263
gag aag ctt cga gaa caa gtt gaa gag cga ctg tcc ttc tat gag act Glu Lys Leu Arg Glu Gln Val Glu Glu Arg Leu Ser Phe Tyr Glu Thr 395 400 405 410			1311
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aaa cag gag aag aaa cgc tta aag aag gaa aag aaa cgg ctg gct gca Lys Gln Glu Lys Lys Arg Leu Lys Lys Glu Lys Lys Arg Leu Ala Ala 445 450 455			1455
ctt gcc ctc gcg tct tca gaa aac agc agt agt act cca gag gag tgt Leu Ala Leu Ala Ser Ser Glu Asn Ser Ser Ser Thr Pro Glu Glu Cys 460 465 470			1503
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Arg Ser Gly Ser Lys Lys Lys Arg Lys Phe Ser Lys Glu Glu Pro Val			
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agc agt ggg cct gaa gag gcg gct ggc aag agc agc tcc aag aag aag			1839
Ser Ser Gly Pro Glu Glu Ala Ala Gly Lys Ser Ser Ser Lys Lys Lys			
	575	580	585
aaa aag ttc cat aaa gca tcc cag gaa gat tag aatgcaaa tggacattct			1890
Lys Lys Phe His Lys Ala Ser Gln Glu Asp *			
	590	595	
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ctgctcccca ctttcgttga tgtggtagtg gtgatgactg agccaaccac ctaatgtgga	180
aatgagagga cagcaagatt gtgggtatgg aatggggcaa agcaataagg gaaaattagt	240
gtggcagggt tcagtacagc agcctggggt cccatttccc cccatattca aatgctgaca	300
ctctcttctc ctcccagggtc cagcctgtgg tgtccaca	353
	atg ccc cag gcc tct Met Pro Gln Ala Ser 1 5
gag cac cgc ctg ggc cgt acc cga gag cca cct gtt aat atc cag ccc	401
Glu His Arg Leu Gly Arg Thr Arg Glu Pro Pro Val Asn Ile Gln Pro	
	10 15 20
cga gtg gga tcc aag cta cca ttt gcc ccc agg gcc cgc agc aag gag	449
Arg Val Gly Ser Lys Leu Pro Phe Ala Pro Arg Ala Arg Ser Lys Glu	
	25 30 35
cgc aga aac cca gcc tct ggg cca aac ccc atg tta cga cct ctg cct	497
Arg Arg Asn Pro Ala Ser Gly Pro Asn Pro Met Leu Arg Pro Leu Pro	
	40 45 50
ccc cgg cca ggt ctg cct gat gaa cgg ctc aag aaa ctg gag ctg gga	545
Pro Arg Pro Gly Leu Pro Asp Glu Arg Leu Lys Lys Leu Glu Leu Gly	
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cgg gga cgg acc tca ggc cct cgt ccc aga ggc ccc ctt cga gca gat	593
Arg Gly Arg Thr Ser Gly Pro Arg Pro Arg Gly Pro Leu Arg Ala Asp	
	70 75 80 85

cat ggg gtt ccc ctg cct ggc tca cca ccc cca aca gtg gct ttg cct	641
His Gly Val Pro Leu Pro Gly Ser Pro Pro Pro Thr Val Ala Leu Pro	
90 95 100	
ctc cca tct cgg acc aac tta gcc cgt tcc aag tct gtg agc agt ggg	689
Leu Pro Ser Arg Thr Asn Leu Ala Arg Ser Lys Ser Val Ser Ser Gly	
105 110 115	
gac ttg cgt cca atg ggg att gcc ttg gga ggg cac cgt ggc acc gga	737
Asp Leu Arg Pro Met Gly Ile Ala Leu Gly Gly His Arg Gly Thr Gly	
120 125 130	
gag ctt ggg gct gca ctg agc cgc ttg gcc ctc cgg cct gag cca ccc	785
Glu Leu Gly Ala Ala Leu Ser Arg Leu Ala Leu Arg Pro Glu Pro Pro	
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Thr Leu Arg Arg Ser Thr Ser Leu Arg Arg Leu Gly Gly Phe Pro Gly	
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Pro Pro Thr Leu Phe Ser Ile Arg Thr Glu Pro Pro Ala Ser His Gly	
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Ser Phe His Met Ile Ser Ala Arg Ser Ser Glu Pro Phe Tyr Ser Asp	
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gac aag atg gct cat cac aca ctc ctt ctg ggc tct ggt cat gtt ggc	977
Asp Lys Met Ala His His Thr Leu Leu Leu Gly Ser Gly His Val Gly	
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Leu Arg Asn Leu Gly Asn Thr Cys Phe Leu Asn Ala Val Leu Gln Cys	
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Leu Ser Ser Thr Arg Pro Leu Arg Asp Phe Cys Leu Arg Arg Asp Phe	
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Arg Gln Glu Val Pro Gly Gly Gly Arg Ala Gln Glu Leu Thr Glu Ala	
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Phe Ala Asp Val Ile Gly Ala Leu Trp His Pro Asp Ser Cys Glu Ala	
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Val Asn Pro Thr Arg Phe Arg Ala Val Phe Gln Lys Tyr Val Pro Ser	
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Met Glu Arg Leu His Leu Glu Ile Asn Arg Arg Gly Arg Arg Ala Pro	
310 315 320 325	
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Pro Ile Leu Ala Asn Gly Pro Val Pro Ser Pro Pro Arg Arg Gly Gly	
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Ala Leu Leu Glu Glu Pro Glu Leu Ser Asp Asp Asp Arg Ala Asn Leu	
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Met Trp Lys Arg Tyr Leu Glu Arg Glu Asp Ser Lys Ile Val Asp Leu	
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Phe Val Gly Gln Leu Lys Ser Cys Leu Lys Cys Gln Ala Cys Gly Tyr	
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Lys Lys Gly Phe Ala Gly Gly Lys Val Ser Leu Arg Asp Cys Phe Asn	
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Leu Phe Thr Lys Glu Glu Glu Leu Glu Ser Glu Asn Ala Pro Val Cys	
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Arg Gly Ser Ile Lys Lys Ser Ser Val Gly Val Asp Phe Pro Leu Gln	
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Arg Leu Ser Leu Gly Asp Phe Ala Ser Asp Lys Ala Gly Ser Pro Val	
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Tyr Gln Leu Tyr Ala Leu Cys Asn His Ser Gly Ser Val His Tyr Gly	
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<213> Homo sapiens

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<222> (495) .. (2750)

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Met Pro Ser Val Ile Cys Glu His Thr Lys Gln Phe

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Gly	Asp	Thr	Ser	Pro	Ser	Pro	Lys	Pro	Glu	Val	Phe	Ser	Asn	Val	Pro			
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gaa	aga	gac	ctt	tca	aat	gta	tct	aac	ata	cat	tcc	agt	ttt	gca	act	674		
Glu	Arg	Asp	Leu	Ser	Asn	Val	Ser	Asn	Ile	His	Ser	Ser	Phe	Ala	Thr			
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Leu	Ile	Lys	Asn	Thr	Ala	Pro	Val	Asn	Thr	Val	Met	Asp	Ser	Pro	Val			
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cat	tta	gag	cca	tct	agt	cag	gtt	ggt	gtg	atc	cag	aat	aaa	tca	tgg	818		
His	Leu	Glu	Pro	Ser	Ser	Gln	Val	Gly	Val	Ile	Gln	Asn	Lys	Ser	Trp			
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gag	atg	cct	gtt	gat	aga	cta	gag	aca	tta	agc	acc	aga	gac	ttt	atc	866		
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Glu Lys Arg Leu Val Ala Glu Glu Glu Glu Asp Glu Glu Glu Val Glu	
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Ile His Leu Asp Thr Ser Ser Phe Val Glu Glu Leu Pro Gly Glu Lys	
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Asp Leu Ile Ala His Leu Glu Gln Gly Lys Lys Pro Leu Thr Met Lys
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Lys Val Ile Leu Arg Arg Tyr Glu Lys Arg Gly His Gly Asn Leu Gln
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Leu Ile Lys Arg Cys Glu Ser Val Asp Glu Cys Lys Val His Thr Gly
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Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Glu Glu Cys Gly Lys	
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Gly Glu Lys Pro Tyr Lys Cys Asp Lys Cys Asp Lys Ala Phe Ile Ala	
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act aaa cat aag aaa att cat act gga gag aaa ccc tac aaa tgt gaa	1771
Thr Lys His Lys Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu	
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gaa tgt ggc aaa gct ttt aac cag tcc tca acc ctt att aaa cat aag	1819
Glu Cys Gly Lys Ala Phe Asn Gln Ser Ser Thr Leu Ile Lys His Lys	
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aaa att cat act aga gag aaa ccc tac aaa tgt gaa gaa tgt ggc aaa	1867
Lys Ile His Thr Arg Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys	
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Ala Phe His Leu Ser Thr His Leu Thr Thr His Lys Ile Leu His Thr	
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gga gag aaa cct tat aga tgt aga gaa tgt ggc aaa gct ttt aac cat	1963
Gly Glu Lys Pro Tyr Arg Cys Arg Glu Cys Gly Lys Ala Phe Asn His	
565 570 575	
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Ser Ala Thr Leu Ser Ser His Lys Lys Ile His Ser Gly Glu Lys Pro	
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Tyr Glu Cys Asp Lys Cys Gly Lys Ala Phe Ile Ser Pro Ser Ser Leu	
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Ser Arg His Glu Ile Ile His Thr Gly Glu Lys Pro *	
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1742

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aca acc aag tca gag ctg ctg agc cag ctc cag cag cat gag gaa gag	880
Thr Thr Lys Ser Glu Leu Leu Ser Gln Leu Gln Gln His Glu Glu Glu	
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Ser Arg Ala Gln Arg Asp Ala Lys Arg Pro Lys Ile Ser Phe Ser Asn	
190 195 200	
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Ile Ile Ser Asp Met Lys Val Ala Arg Ser Ala Thr Ala Arg Val Arg	
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Ser Arg Pro Glu Leu Arg Ile Gln Phe Asp Glu Gly Tyr Asp Asn Tyr	
220 225 230 235	
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Pro Gly Gln Glu Lys Thr Asp Asp Leu Lys Lys Arg Lys Asn Ile Phe	
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Thr Gly Lys Arg Leu Asn Ile Phe Asp Met Met Ala Val Thr Lys Glu	
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Ala Pro Glu Thr Asp Thr Ser Pro Ser Leu Trp Asp Val Glu Phe Ala	
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Lys Gln Leu Ala Thr Val Asn Glu Gln Pro Leu Gln Asn Gly Phe Glu	
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Glu Leu Ile Gln Trp Thr Lys Glu Gly Lys Leu Trp Glu Phe Pro Ile	
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Asn Asn Glu Ala Gly Phe Asp Asp Asp Gly Ser Glu Phe His Glu His	
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Ile Phe Leu Glu Lys His Leu Glu Ser Phe Pro Lys Gln Gly Pro Ile	
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Arg His Phe Met Glu Leu Val Thr Cys Gly Leu Ser Lys Asn Pro Tyr	
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aattttacta gagtttgtat atgttatgtt gattattaca tttgatttgg ctggtataaa	1624

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 atctggaatt cgcgggcgcg tgcacggcag cgggacgcac catttcagtt gtgttcttgg 300
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 Met Phe Pro Arg Val Ser Thr Phe Leu Pro Leu
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 cgc ccc ctt tcc cgc cac cct ttg tcc tct gga agc ccg gag aca tca 400
 Arg Pro Leu Ser Arg His Pro Leu Ser Ser Gly Ser Pro Glu Thr Ser
 15 20 25
 gcg gct gcg att atg cta ctc act gtt cgg cac gga aca gtc cgg aca 448
 Ala Ala Ala Ile Met Leu Leu Thr Val Arg His Gly Thr Val Arg Thr
 30 35 40
 aaa aat aac atc caa aga tat ttt ggc act aac agt gtg atc tgt agc 496
 Lys Asn Asn Ile Gln Arg Tyr Phe Gly Thr Asn Ser Val Ile Cys Ser
 45 50 55
 aag aaa gat aag cag tct gtt cga act gag gag act tcc aag gag act 544
 Lys Lys Asp Lys Gln Ser Val Arg Thr Glu Glu Thr Ser Lys Glu Thr
 60 65 70 75
 tca gag agc caa gac agt gaa aag gaa aat acg aaa aaa gac ttg tta 592
 Ser Glu Ser Gln Asp Ser Glu Lys Glu Asn Thr Lys Lys Asp Leu Leu
 80 85 90
 ggc att att aag ggc atg aaa gtt gaa tta agc aca gta aat gta cga 640
 Gly Ile Ile Lys Gly Met Lys Val Glu Leu Ser Thr Val Asn Val Arg
 95 100 105

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Thr Thr Lys Pro Pro Lys Arg Arg Pro Leu Lys Ser Leu Glu Ala Thr	
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Leu Gly Arg Leu Arg Arg Ala Thr Glu Tyr Ala Pro Lys Lys Arg Ile	
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Glu Pro Leu Ser Pro Glu Leu Val Ala Ala Ala Ser Ala Val Ala Asp	
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Ser Leu Pro Phe Asp Lys Gln Thr Thr Lys Ser Glu Leu Leu Ser Gln	
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Pro Lys Ile Ser Phe Ser Asn Ile Ile Ser Asp Met Lys Val Ala Arg	
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Leu Trp Asp Val Glu Phe Ala Lys Gln Leu Ala Thr Val Asn Glu Gln	
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Pro Leu Gln Asn Gly Phe Glu Glu Leu Ile Gln Trp Thr Lys Glu Gly	
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Lys Leu Trp Glu Phe Pro Ile Asn Asn Glu Ala Gly Phe Asp Asp Asp	
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Gly Ser Glu Phe His Glu His Ile Phe Leu Glu Lys His Leu Glu Ser	
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Phe Pro Lys Gln Gly Pro Ile Arg His Phe Met Glu Leu Val Thr Cys	
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Gly Leu Ser Lys Asn Pro Tyr Leu Ser Val Lys Gln Lys Val Glu His	
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 Glu Ser Asn Ile Gln Phe Asn *
 380 385

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 accacgtgcg gccggaaggg aagtaacgct agcctgagaa ctgagtagct gtactgtgtg 180
 gcgccttatt ctaggcactt gttgggcaga atg tca cac ctg ccg atg aaa 231
 Met Ser His Leu Pro Met Lys
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 ctc ctg cgt aag aag atc gag aag cgg aac ctc aaa ttg cgg cag cgg 279
 Leu Leu Arg Lys Lys Ile Glu Lys Arg Asn Leu Lys Leu Arg Gln Arg
 10 15 20

 aac cta aag ttt cag ggg gcc tca aat ctg acc cta tcg gaa act caa 327
 Asn Leu Lys Phe Gln Gly Ala Ser Asn Leu Thr Leu Ser Glu Thr Gln
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 aat gga gat gta tct gaa gaa aca atg gga agt aga aag gtt aaa aaa 375
 Asn Gly Asp Val Ser Glu Glu Thr Met Gly Ser Arg Lys Val Lys Lys
 40 45 50 55

 tca aaa caa aag ccc atg aat gtg ggc tta tca gaa act caa aat gga 423
 Ser Lys Gln Lys Pro Met Asn Val Gly Leu Ser Glu Thr Gln Asn Gly
 60 65 70

 ggc atg tct caa gaa gca gtg gga aat ata aaa gtt aca aag tct ccc 471

Gly	Met	Ser	Gln	Glu	Ala	Val	Gly	Asn	Ile	Lys	Val	Thr	Lys	Ser	Pro		
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Gln	Lys	Ser	Thr	Val	Leu	Ser	Asn	Gly	Glu	Ala	Ala	Met	Gln	Ser	Ser		
		90					95					100					
aat	tca	gaa	tca	aaa	aag	aaa	aag	aag	aaa	aag	aga	aaa	atg	gtg	aat		567
Asn	Ser	Glu	Ser	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Arg	Lys	Met	Val	Asn		
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Asp	Ala	Glu	Pro	Asp	Thr	Lys	Lys	Ala	Lys	Thr	Glu	Asn	Lys	Gly	Lys		
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Ser	Glu	Glu	Glu	Ser	Ala	Glu	Thr	Thr	Lys	Glu	Thr	Glu	Asn	Asn	Val		
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Leu	Gly	Leu	Thr	Gly	Ala	Phe	Glu	Asp	Thr	Ser	Phe	Ala	Ser	Leu	Cys		
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Asn	Leu	Val	Asn	Glu	Asn	Thr	Leu	Lys	Ala	Ile	Lys	Glu	Met	Gly	Phe		
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Gln	Lys	Leu	Gly	Asn	Gly	Ile	Asn	Ile	Ile	Val	Ala	Thr	Pro	Gly	Arg		
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Leu	Leu	Asp	His	Met	Gln	Asn	Thr	Pro	Gly	Phe	Met	Tyr	Lys	Asn	Leu		
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Cys	Asn	Ala	Asp	Ser	Gly	Thr	Leu	Leu	Cys	Thr	Asp	Val	Ala	Ala	Arg		
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gac	ttt	tcc	tgg	tct	aaa	att	tct	gac	att	cag	tct	cag	ctt	gag	aaa	1911	
Asp	Phe	Ser	Trp	Ser	Lys	Ile	Ser	Asp	Ile	Gln	Ser	Gln	Leu	Glu	Lys		
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Leu	Ile	Glu	Lys	Asn	Tyr	Phe	Leu	His	Lys	Ser	Ala	Gln	Glu	Ala	Tyr		
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600 605 610 615																
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Lys Val Pro Pro Phe Val Asp Leu Asn Val Asn Ser Asn Glu Gly Lys																
620 625 630																
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Gln Lys Lys Arg Gly Gly Gly Gly Gly Phe Gly Tyr Gln Lys Thr Lys																
635 640 645																
aaa gtt gag aaa tcc aaa atc ttt aaa cac att agc aag aaa tca tct	2199															
Lys Val Glu Lys Ser Lys Ile Phe Lys His Ile Ser Lys Lys Ser Ser																
650 655 660																
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Asp Ser Arg Gln Phe Ser His *																
665 670																
ttgtcctaaa atgaattttt tttccccttg atttaacagg atttttgtag actttagaat	2313															
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tctatcacgt ctctctttta tttctgggat ataaaacagg ctttaagttt cttgggtgcc	2433															
caagggcaga gcaaggaata tctggtgttt cttgtgatga taatatttta attttaaata	2493															
tcctccctc atacaagtgt atgttaccat tttaatataa ttctttttgt atctttcctt	2553															
cttgttttgt gaagattttt gtggcatgga ttgctgtgct cactgctgta aaaggtgacc	2613															
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taattcaagg tggtttggat ttggtaagcc tttgcactct gtagagtact tagaagacaa	2733															
gggcaactta cttggagtta gagccaagct gtcagacggt gccagcaca cattaatgtt	2793															
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accctggctg gacctgtcct ggacttccaa ccttgactgc tgagctcctg gcttagcttc	3213															
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tttttcagaa ataattgttt ttaaaagaca aaacaaaagg gaagaatatt taattactga	3333															
gcagaagtaa atactgttggt tattttgtac ataactaat ttttatatgc atgttcatgc	3393															
tttttaattt ttttatcaaa aattaagtca tctacctact acttgtaacc agcttgtttc	3453															
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<222> (157) .. (489)
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cagtttacat atattcttga taacctctcc aacttt atg tct cac cac ccc cac Met Ser His His Pro His 1 5	174
tca ctt cgt aat tcg tgc ctt atc aga atg gac ctg tta tac tgg cag Ser Leu Arg Asn Ser Cys Leu Ile Arg Met Asp Leu Leu Tyr Trp Gln 10 15 20	222
ttc acc ata tat acc att aca ttt tgt ttc tcc cat ctc tca ggt aga Phe Thr Ile Tyr Thr Ile Thr Phe Cys Phe Ser His Leu Ser Gly Arg 25 30 35	270
ctt aca ctt tcg gcc cag cac atc agt cat cgc cct tgc ttg ctt tcc Leu Thr Leu Ser Ala Gln His Ile Ser His Arg Pro Cys Leu Leu Ser 40 45 50	318
tat tca ctc ctg ttc tgg aag gtg cac cac ctt ttc ttg gaa ggc ttc Tyr Ser Leu Leu Phe Trp Lys Val His His Leu Phe Leu Glu Gly Phe 55 60 65 70	366
cct tgc tct ccc agg cta gat gag atg tcc ttc cat cag ttc cca cag Pro Cys Ser Pro Arg Leu Asp Glu Met Ser Phe His Gln Phe Pro Gln 75 80 85	414
cac cct gtg cat gta tct gtt gtg cac tta cca ata gta tac aag gga His Pro Val His Val Ser Val Val His Leu Pro Ile Val Tyr Lys Gly 90 95 100	462
tct atg acc caa gtc tct ccc cac tag cttgt aagctcctca cagacaggaa Ser Met Thr Gln Val Ser Pro His * 105 110	514
ccatgttttg tctttgtact ccagtgccta gtatataaga gatactcaat aaataaatat	574
ttgtcaaadc aactaattga ttccttgtga cctaattcta gagaatggga agaaggcctg	634
ttattttggt gtcctttatg gttcttttagg aaagctctcc aagcttggca tttgtcaggg	694
tgggaggaaa actggtgaag tattaagact ggacacatgg ctgctaattc atcagcttat	754
cattgaaaaa gtccatagcc aaaacctgac tgtgcactta ctataggacc ctgacctgcc	814
tgggtctccc tgtctctcca gccagtatat ttaaaggtaa tgagataatg atgagtgttt	874
tgaaaaatgt ttagtgttca aatagaaacc attcgtgtcc cttcactctc tgaacataqt	934

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ctgcaaactct ctccctctct ggtatgttct tgttttgtgg attagactgc taaataagcg      994
aagagttaat tttgaagtct aggtcaacaa attcctgttt ggagacgggc tggtcctgaa    1054
taccaggttg ttatctgtct attacagccc ctccacttct gggctcctgg ccctttgcga    1114
agtacttcag aaagcctaga gagaagagag ggccctcaaa tccattcca gccctaaat      1174
gaaagtggca tcacaaggag aaaagtggag gtagaaatgt accatggggg acgttgcccc    1234
attgccttct tcccctgac tactgggctt cctctatcag ctttaacgct ggaagtagct    1294
gagtctccag tcaactgggtg ccttcccca gtgagctcag cagcatgtgc taataggtgc    1354
caatactgtg ctggctccag tgggattcct ctctgcaaag ctgctggctt agcttgactg    1414
tttccctatt cctctcctta gaactttcat agccagtcaa gcatagaatt gcatccattc    1474
ttctgaaata ggatctgtgc ctaatttttc attggcttgg ccaagattct gttacctgta    1534
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gtgttcctat cccaggatgg ctgttgggat taggagtgga atgaggaata gtttaggacc    1654
acaagagatt tggcctcctt ggaacatgta ggaaggcctc aaggatgtaa ttctagccca    1714
gggaagaaaa tctttttcag cagacgcttc ccttcccttc cctagggaa tgtgtccta    1774
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cttaatgttg ttcctatgg.                                     1853

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 <211> 1388
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (37)..(963)

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                                         Met Ala Gly Lys Lys Asn
                                         1           5

ggt ctg tgg tct ctc gca gtt tac gcg gaa gat tca gag ccc gag tct      102
Val Leu Ser Ser Leu Ala Val Tyr Ala Glu Asp Ser Glu Pro Glu Ser
          10           15           20

gat ggc gag gct gga atc gag gcg gtg ggc agc gcg gct gag gag aaa      150
Asp Gly Glu Ala Gly Ile Glu Ala Val Gly Ser Ala Ala Glu Glu Lys
          25           30           35

ggc gga ttg gta tct gat gcc tat ggg gag gat gac ttt tct cgt cta      198
Gly Gly Leu Val Ser Asp Ala Tyr Gly Glu Asp Asp Phe Ser Arg Leu
          40           45           50

ggg ggt gat gaa gat ggt tat gaa gaa gaa gaa gat gag aac agt aga      246
Gly Gly Asp Glu Asp Gly Tyr Glu Glu Glu Glu Asp Glu Asn Ser Arg
          55           60           65           70

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cag tcg gaa gat gac gat tca gag act gaa aaa cct gag gct gat gac	294
Gln Ser Glu Asp Asp Asp Ser Glu Thr Glu Lys Pro Glu Ala Asp Asp	
75 80 85	
cca aag gat aat aca gaa gca gaa aag cga gac ccc cag gaa ctc gtg	342
Pro Lys Asp Asn Thr Glu Ala Glu Lys Arg Asp Pro Gln Glu Leu Val	
90 95 100	
gcc tcc ttt tct gaa aga gtt cgg aac atg tcg cct gat gaa atc aag	390
Ala Ser Phe Ser Glu Arg Val Arg Asn Met Ser Pro Asp Glu Ile Lys	
105 110 115	
atc ccg cca gaa ccc cct ggc aga tgt tca aat cac ttg caa gac aag	438
Ile Pro Pro Glu Pro Pro Gly Arg Cys Ser Asn His Leu Gln Asp Lys	
120 125 130	
atc cag aag ctt tat gaa cga aag ata aag gag gga atg gat atg aac	486
Ile Gln Lys Leu Tyr Glu Arg Lys Ile Lys Glu Gly Met Asp Met Asn	
135 140 145 150	
tac att atc caa agg aag aaa gaa ttt cgg aac cct agc atc tac gag	534
Tyr Ile Ile Gln Arg Lys Lys Glu Phe Arg Asn Pro Ser Ile Tyr Glu	
155 160 165	
aag ctg atc cag ttc tgt gcc att gac gag ctt ggc acc aac tac cca	582
Lys Leu Ile Gln Phe Cys Ala Ile Asp Glu Leu Gly Thr Asn Tyr Pro	
170 175 180	
aag gat atg ttt gat ccc cat ggc tgg tct gag gac tcc tac tat gag	630
Lys Asp Met Phe Asp Pro His Gly Trp Ser Glu Asp Ser Tyr Tyr Glu	
185 190 195	
gca tta gcc aag gcc cag aaa att gag atg gac aaa ttg gaa aag gcc	678
Ala Leu Ala Lys Ala Gln Lys Ile Glu Met Asp Lys Leu Glu Lys Ala	
200 205 210	
aaa aag gag cga aca aaa att gag ttt gtg acg ggc acc aaa aaa ggc	726
Lys Lys Glu Arg Thr Lys Ile Glu Phe Val Thr Gly Thr Lys Lys Gly	
215 220 225 230	
acc acg acc aac gcc acg tcc acc acc act acc act gcc agc aca gct	774
Thr Thr Thr Asn Ala Thr Ser Thr Thr Thr Thr Thr Ala Ser Thr Ala	
235 240 245	
gtt gca gat gct cag aag aga aag agc aag tgg gat tcg gct atc cca	822
Val Ala Asp Ala Gln Lys Arg Lys Ser Lys Trp Asp Ser Ala Ile Pro	
250 255 260	
gtg aca acg ata gcc cag ccc acc atc ctc acc acc aca gcc acc ctg	870
Val Thr Thr Ile Ala Gln Pro Thr Ile Leu Thr Thr Thr Ala Thr Leu	
265 270 275	
cca gct gtt gtc acg gtc acc acc agc gcc agc ggc tcc aag acc acc	918
Pro Ala Val Val Thr Val Thr Thr Ser Ala Ser Gly Ser Lys Thr Thr	
280 285 290	
gtc atc tct gct gtg ggc acc att gtg aag aag gcc aag cag tga cct	966
Val Ile Ser Ala Val Gly Thr Ile Val Lys Lys Ala Lys Gln *	
295 300 305	
gagggggccac cctaggactt gaaaggaccg tgcagcccag tgaccactgc ccagtgggag	1026
gcgccacttt gtatatattca ggactgggac ctactcecca gatgccacct gagaggagct	1086

tctgtttggc attccagatg gaaggacagg cagcacggga gccaggcgct gtggacaggg 1146
tctgtccacg caccacctgg ggtctgccgc ctattaaaag tgccgtattc ttacctcttg 1206
gcatctcaga tgcactggcc tctcctgcat tctgtttgca ggcaaatgct tcagctcaca 1266
tgtcccccaa gactcaatag tcttggttgg gactattgcc tcagggttga caacaggggtg 1326
atggaggcct gggacgctgt tcagaggggt gaccaagaa gtcaccgttg ttatccgtgt 1386
at 1388

<210> 631
<211> 1562
<212> DNA
<213> Homo sapiens

<220>
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<222> (37)..(1137)

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1 5

ggt ctg tgg tct ctc gca gtt tac gcg gaa gat tca gag ccc gag tct 102
Val Leu Ser Ser Leu Ala Val Tyr Ala Glu Asp Ser Glu Pro Glu Ser
10 15 20

gat ggc gag gct gga atc gag gcg gtg ggc agc gcg gct gag gag aaa 150
Asp Gly Glu Ala Gly Ile Glu Ala Val Gly Ser Ala Ala Glu Glu Lys
25 30 35

ggc gga ttg gta tct gat gcc tat ggg gag gat gac ttt tct cgt cta 198
Gly Gly Leu Val Ser Asp Ala Tyr Gly Glu Asp Asp Phe Ser Arg Leu
40 45 50

ggg ggt gat gaa gat ggt tat gaa gaa gaa gaa gat gag aac agt aga 246
Gly Gly Asp Glu Asp Gly Tyr Glu Glu Glu Glu Asp Glu Asn Ser Arg
55 60 65 70

cag tgg aga cgg tgt ttc act atg ttt ccc agt ctg gtt tca aac ttc 294
Gln Ser Arg Arg Cys Phe Thr Met Phe Pro Ser Leu Val Ser Asn Phe
75 80 85

tgg cct caa gca att ccc ctg cct cac cct ccc aaa gtg ctg gga tta 342
Trp Pro Gln Ala Ile Pro Leu Pro His Pro Pro Lys Val Leu Gly Leu
90 95 100

cag gaa gat gac gat tca gag act gaa aaa cct gag gct gat gac cca 390
Gln Glu Asp Asp Asp Ser Glu Thr Glu Lys Pro Glu Ala Asp Asp Pro
105 110 115

aag gat aat aca gaa gca gaa aag cga gac ccc cag gaa ctc gtg gcc 438
Lys Asp Asn Thr Glu Ala Glu Lys Arg Asp Pro Gln Glu Leu Val Ala
120 125 130

tcc ttt tct gaa aga gtt cgg aac atg tgg cct gat gaa atc aag atc 486
Ser Phe Ser Glu Arg Val Arg Asn Met Ser Pro Asp Glu Ile Lys Ile

135	140	145	150	
ccg cca gaa ccc cct ggc aga tgt tca aat cac ttg caa gac aag atc				534
Pro Pro Glu Pro Pro Gly Arg Cys Ser Asn His Leu Gln Asp Lys Ile				
	155	160	165	
cag aag ctt tat gaa cga aag ata aag gag gga atg gat atg aac tac				582
Gln Lys Leu Tyr Glu Arg Lys Ile Lys Glu Gly Met Asp Met Asn Tyr				
	170	175	180	
att atc caa agg aag aaa gaa ttt cgg aac cct agc atc tac gag aag				630
Ile Ile Gln Arg Lys Lys Glu Phe Arg Asn Pro Ser Ile Tyr Glu Lys				
	185	190	195	
ctg atc cag ttc tgt gcc att gac gag ctt ggc acc aac tac cca aag				678
Leu Ile Gln Phe Cys Ala Ile Asp Glu Leu Gly Thr Asn Tyr Pro Lys				
	200	205	210	
gat atg ttt gat ccc cat ggc tgg tct gag gac tcc tac tat gag gca				726
Asp Met Phe Asp Pro His Gly Trp Ser Glu Asp Ser Tyr Tyr Glu Ala				
	215	220	225	230
tta gcc aag gcc cag aaa att gag atg gac aaa ttg gaa aag gcc aaa				774
Leu Ala Lys Ala Gln Lys Ile Glu Met Asp Lys Leu Glu Lys Ala Lys				
	235	240	245	
aag gag cga aca aaa gct tgt tgc agg gac gtg tct gca gcg cct ggg				822
Lys Glu Arg Thr Lys Ala Cys Cys Arg Asp Val Ser Ala Ala Pro Gly				
	250	255	260	
gaa ccg agc tgt cct tcc cct gtg cgg gcg ggc acc gcc tcc tcc tgg				870
Glu Pro Ser Cys Pro Ser Pro Val Arg Ala Gly Thr Ala Ser Ser Trp				
	265	270	275	
att gag ttt gtg acg ggc acc aaa aaa ggc acc acg acc aac gcc acg				918
Ile Glu Phe Val Thr Gly Thr Lys Lys Gly Thr Thr Thr Asn Ala Thr				
	280	285	290	
tcc acc acc act acc act gcc agc aca gct gtt gca gat gct cag aag				966
Ser Thr Thr Thr Thr Thr Ala Ser Thr Ala Val Ala Asp Ala Gln Lys				
	295	300	305	310
aga aag agc aag tgg gat tcg gct atc cca gtg aca acg ata gcc cag				1014
Arg Lys Ser Lys Trp Asp Ser Ala Ile Pro Val Thr Thr Ile Ala Gln				
	315	320	325	
ccc acc atc ctc acc acc aca gcc acc ctg cca gct gtt gtc acg gtc				1062
Pro Thr Ile Leu Thr Thr Thr Ala Thr Leu Pro Ala Val Val Thr Val				
	330	335	340	
acc acc agc gcc agc ggc tcc aag acc acc gtc atc tct gct gtg ggc				1110
Thr Thr Ser Ala Ser Gly Ser Lys Thr Thr Val Ile Ser Ala Val Gly				
	345	350	355	
acc att gtg aag aag gcc aag cag tga cctga ggggccaccc taggacttga				1162
Thr Ile Val Lys Lys Ala Lys Gln *				
	360	365		
aaggaccgtg cagcccagtg accactgccc agtgggaggc gccactttgt atatttcagg				1222
actgggacct actccccaga tgccacctga gaggagcttc tgtttggcat tccagatgga				1282
aggacaggca gcacgggagc caggcgctgt ggacagggtc tgtccacgca ccacctgggg				1342

tctgccgcct attaaaagt cgtattctt acctcttggc atctcagatg cactggcctc 1402
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (76)..(1152)

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 Met Ala Glu Arg Gln Glu Glu Gln Arg Gly Ser Pro
 1 5 10
 ccc ttg agg gcg gaa ggc aag gcc gac gcg gag gtt aag ctc att ctg 159
 Pro Leu Arg Ala Glu Gly Lys Ala Asp Ala Glu Val Lys Leu Ile Leu
 15 20 25
 tac cat tgg acg cat tcc ttc agc tct caa aag gtg cgc ttg gta att 207
 Tyr His Trp Thr His Ser Phe Ser Ser Gln Lys Val Arg Leu Val Ile
 30 35 40
 gct gaa aag gca ttg aag tgc gag gaa cat gat gta agt ctg ccc ttg 255
 Ala Glu Lys Ala Leu Lys Cys Glu Glu His Asp Val Ser Leu Pro Leu
 45 50 55 60
 agt gag cac aat gag cct tgg ttt atg cgt ttg aac tca act gga gaa 303
 Ser Glu His Asn Glu Pro Trp Phe Met Arg Leu Asn Ser Thr Gly Glu
 65 70 75
 gtg cct gtc ctt atc cac ggg gaa aac ata att tgt gag gcc act cag 351
 Val Pro Val Leu Ile His Gly Glu Asn Ile Ile Cys Glu Ala Thr Gln
 80 85 90
 atc att gat tat ctt gaa cag act ttc ctg gat gaa aga aca ccc agg 399
 Ile Ile Asp Tyr Leu Glu Gln Thr Phe Leu Asp Glu Arg Thr Pro Arg
 95 100 105
 tta atg cct gat aaa gaa agc atg tat tac cca cgg gta caa cat tac 447
 Leu Met Pro Asp Lys Glu Ser Met Tyr Tyr Pro Arg Val Gln His Tyr
 110 115 120
 cga gag ctg ctt gac tcc ttg cca atg gat gcc tat aca cat ggc tgc 495
 Arg Glu Leu Leu Asp Ser Leu Pro Met Asp Ala Tyr Thr His Gly Cys
 125 130 135 140
 att tta cat cct gag tta act gtg gac tcc atg atc ccg gct tat gca 543
 Ile Leu His Pro Glu Leu Thr Val Asp Ser Met Ile Pro Ala Tyr Ala
 145 150 155
 act aca agg att cgt agc caa att gga aac aca gag tct gag ctg aag 591

Thr	Thr	Arg	Ile	Arg	Ser	Gln	Ile	Gly	Asn	Thr	Glu	Ser	Glu	Leu	Lys	
			160					165					170			
aaa	ctt	gct	gaa	gaa	aac	cca	gat	tta	caa	gaa	gca	tac	att	gca	aaa	639
Lys	Leu	Ala	Glu	Glu	Asn	Pro	Asp	Leu	Gln	Glu	Ala	Tyr	Ile	Ala	Lys	
			175				180					185				
cag	aaa	cga	ctt	aaa	tca	aag	ctg	ctt	gat	cat	gac	aat	gtc	aag	tat	687
Gln	Lys	Arg	Leu	Lys	Ser	Lys	Leu	Leu	Asp	His	Asp	Asn	Val	Lys	Tyr	
			190				195				200					
ttg	aag	aaa	att	ctt	gat	gag	ttg	gag	aaa	gtc	ttg	gat	cag	gtt	gaa	735
Leu	Lys	Lys	Ile	Leu	Asp	Glu	Leu	Glu	Lys	Val	Leu	Asp	Gln	Val	Glu	
205					210				215						220	
act	gaa	ttg	caa	aga	aga	aat	gaa	gaa	acc	cca	gaa	gag	ggc	cag	caa	783
Thr	Glu	Leu	Gln	Arg	Arg	Asn	Glu	Glu	Thr	Pro	Glu	Glu	Gly	Gln	Gln	
				225					230					235		
cct	tgg	ctc	tgc	ggc	gaa	tcc	ttc	acc	ctg	gca	gac	gtc	tca	ctc	gct	831
Pro	Trp	Leu	Cys	Gly	Glu	Ser	Phe	Thr	Leu	Ala	Asp	Val	Ser	Leu	Ala	
			240					245					250			
gtc	aca	ttg	cat	cga	ctg	aag	ttc	ctg	ggg	ttt	gca	agg	aga	aac	tgg	879
Val	Thr	Leu	His	Arg	Leu	Lys	Phe	Leu	Gly	Phe	Ala	Arg	Arg	Asn	Trp	
			255				260					265				
gga	aac	gga	aag	cga	cca	aac	ttg	gaa	acc	tat	tac	gag	cgt	gtc	ttg	927
Gly	Asn	Gly	Lys	Arg	Pro	Asn	Leu	Glu	Thr	Tyr	Tyr	Glu	Arg	Val	Leu	
			270				275					280				
aag	aga	aaa	aca	ttt	aac	aag	gtt	tta	gga	cat	gtc	aac	aat	ata	tta	975
Lys	Arg	Lys	Thr	Phe	Asn	Lys	Val	Leu	Gly	His	Val	Asn	Asn	Ile	Leu	
285					290					295					300	
atc	tct	gca	gtg	ctg	cca	aca	gca	ttc	cgg	gtg	gcc	aag	aaa	agg	gcc	1023
Ile	Ser	Ala	Val	Leu	Pro	Thr	Ala	Phe	Arg	Val	Ala	Lys	Lys	Arg	Ala	
				305					310					315		
cca	aaa	gtt	ctt	ggc	acg	acc	ctt	gtg	gtt	ggc	ttg	ctt	gca	gga	gtg	1071
Pro	Lys	Val	Leu	Gly	Thr	Thr	Leu	Val	Val	Gly	Leu	Leu	Ala	Gly	Val	
			320					325					330			
gga	tat	ttt	gct	ttt	atg	ctt	ttc	aga	aag	aga	ctt	ggc	agc	atg	ata	1119
Gly	Tyr	Phe	Ala	Phe	Met	Leu	Phe	Arg	Lys	Arg	Leu	Gly	Ser	Met	Ile	
			335				340					345				
tta	gca	ctt	aga	ccc	aga	cca	aat	tat	ttc	tag						1152
Leu	Ala	Leu	Arg	Pro	Arg	Pro	Asn	Tyr	Phe	*						
			350				355									

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 <213> Homo sapiens

<220>
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 <222> (50) .. (1774)

<400> 633

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                                     Met Cys
                                     1

ccc cga gcc gcg cgg gcg ccc gcg acg cta ctc ctc gcc ctg ggc gcg   103
Pro Arg Ala Ala Arg Ala Pro Ala Thr Leu Leu Leu Ala Leu Gly Ala
      5              10              15

gtg ctg tgg cct gcg gct ggc gcc tgg gag ctt acg att ttg cac acc   151
Val Leu Trp Pro Ala Ala Gly Ala Trp Glu Leu Thr Ile Leu His Thr
      20              25              30

aac gac gtg cac agc cgg ctg gag cag acc agc gag gac tcc agc aag   199
Asn Asp Val His Ser Arg Leu Glu Gln Thr Ser Glu Asp Ser Ser Lys
      35              40              45              50

tgc gtc aac gcc agc cgc tgc atg ggt ggc gtg gct cgg ctc ttc acc   247
Cys Val Asn Ala Ser Arg Cys Met Gly Gly Val Ala Arg Leu Phe Thr
              55              60              65

aag gtt cag cag atc cgc cgc gcc gaa ccc aac gtg ctg ctg ctg gac   295
Lys Val Gln Gln Ile Arg Arg Ala Glu Pro Asn Val Leu Leu Leu Asp
              70              75              80

gcc ggc gac cag tac cag ggc act atc tgg ttc acc gtg tac aag ggc   343
Ala Gly Asp Gln Tyr Gln Gly Thr Ile Trp Phe Thr Val Tyr Lys Gly
              85              90              95

gcc gag gtg gcg cac ttc atg aac gcc ctg cgc tac gat gcc atg gca   391
Ala Glu Val Ala His Phe Met Asn Ala Leu Arg Tyr Asp Ala Met Ala
      100              105              110

ctg gga aat cat gaa ttt gat aat ggt gtg gaa gga ctg atc gag cca   439
Leu Gly Asn His Glu Phe Asp Asn Gly Val Glu Gly Leu Ile Glu Pro
      115              120              125              130

ctc ctc aaa gag gcc aaa ttt cca att ctg agt gca aac att aaa gca   487
Leu Leu Lys Glu Ala Lys Phe Pro Ile Leu Ser Ala Asn Ile Lys Ala
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Lys Gly Pro Leu Ala Ser Gln Ile Ser Gly Leu Tyr Leu Pro Tyr Lys
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gtt ctt cct gtt ggt gat gaa gtt gtg gga atc gtt gga tac act tcc   583
Val Leu Pro Val Gly Asp Glu Val Val Gly Ile Val Gly Tyr Thr Ser
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Lys Glu Thr Pro Phe Leu Ser Asn Pro Gly Thr Asn Leu Val Phe Glu
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gat gaa atc act gca tta caa cct gaa gta gat aag tta aaa act cta   679
Asp Glu Ile Thr Ala Leu Gln Pro Glu Val Asp Lys Leu Lys Thr Leu
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Lys Leu Ile Ala Gln Lys Val Arg Gly Val Asp Val Val Val Gly Gly
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Tyr Ile Ser Lys Met Lys Val Ile Tyr Pro Ala Val Glu Gly Arg Ile	
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 Met Thr Ser Val Ala Ala Arg Ser His Met Trp Pro Cys
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 Ser Gly Lys Thr Gly Glu Gln Glu Gly Ser Leu Ser Thr Leu Phe Ser
 15 20 25
 aga ctt tat gca ttt gtg atg tct gtt att tca gat gac aga ttt gaa 324
 Arg Leu Tyr Ala Phe Val Met Ser Val Ile Ser Asp Asp Arg Phe Glu
 30 35 40 45
 gat ctg gaa gag gca aat cca ttc tct ttt aga gag ttt ctg aag acc 372
 Asp Leu Glu Glu Ala Asn Pro Phe Ser Phe Arg Glu Phe Leu Lys Thr
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 Lys Asn Leu Gly Leu Ser Lys Glu Asp Pro Ala Ser Arg Ile Tyr Ala
 65 70 75
 aag gaa gcc tcg agg cat tcc ctg gga ctt gac cac aac tcc cca ccc 468
 Lys Glu Ala Ser Arg His Ser Leu Gly Leu Asp His Asn Ser Pro Pro
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 tcc caa acc ggc ggg tat ggc ctg gag tat cag cag cca ttt ttc gag 516
 Ser Gln Thr Gly Gly Tyr Gly Leu Glu Tyr Gln Gln Pro Phe Phe Glu
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Asp Pro Thr Gly Ala Gly Asp Leu Leu Asp Glu Glu Glu Asp Glu Asp	
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acc gga tgg agt ggg gcc tac ctg ccg tcc gcc atc gag cag act cac	612
Thr Gly Trp Ser Gly Ala Tyr Leu Pro Ser Ala Ile Glu Gln Thr His	
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Phe Phe Ser Thr Pro Ser Glu Leu Ala Gly Pro Glu Ser Leu Pro Ser	
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Trp Ala Leu Ser Asp Thr Asp Ser Arg Val Ser Pro Ala Ser Pro Ala	
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Gly Ser Pro Ser Ala Asp Phe Ala Val His Gly Glu Ser Leu Gly Asp	
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Arg His Leu Arg Thr Leu Gln Ile Ser Tyr Asp Ala Leu Lys Asp Glu	
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Met Ile Lys Glu Glu Ser Asp Tyr His Asp Leu Glu Ser Val Val Gln	
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Gln Val Glu Gln Asn Leu Glu Leu Met Thr Lys Arg Ala Val Lys Ala	
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Gln Val Ser Asn Phe Gln Arg Glu Asn Glu Ala Leu Arg Cys Gly Gln	
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Gly Ala Ser Leu Thr Val Val Lys Gln Asn Ala Asp Val Ala Leu Gln	
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Val Ser Gly Ala Glu Thr Leu Asn Leu Val Ala Glu Ile Leu Lys Ser	
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 Ile Asp Arg Ile Ser Glu Val Lys Asp Glu Glu Glu Asp Ser *
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 Pro Pro Ala Arg Leu Ser Gly Val Met Val Pro Ala Pro Ile Gln Asp
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Arg Glu Thr Ala Pro Arg Thr Ile Phe Gln Arg Val Leu Asp Ile Leu	
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Lys Lys Ser Ser His Ala Val Glu Leu Ala Cys Arg Asp Pro Ser Gln	
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Val Glu Asn Leu Ala Ser Ser Leu Gln Leu Ile Thr Glu Cys Phe Arg	
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Cys Leu Arg Asn Ala Cys Ile Glu Cys Ser Val Asn Gln Asn Ser Ile	
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agg aac ttg gat acg att ggt gtt gct gtt gat ttg att ctt ctg ttt	568
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Thr Ser Leu Asn His Glu Arg Met Lys Glu Leu Glu Glu Asn Leu Asn	
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Leu Asp Leu Met Ile Ala Lys Ile Thr Ser Asp Glu Pro Leu Thr Lys	
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Phe Val Asp Gln Cys Lys Thr Val Leu Lys Leu Ala Ser Glu Glu Pro	
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 Asp Thr Pro Lys Pro *
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Lys Glu Arg Pro Ala Glu Pro Leu Thr Pro Pro Pro Ser Tyr Gly His
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Gln Pro Gln Thr Gly Ser Gly Glu Ser Ser Gly Ala Ser Gly Asp Lys
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Ala Pro Ala Ala Pro Pro Phe Ser Ser Ser Ser Gly Val Leu Gly Thr
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Gly Leu Cys Glu Leu Asp Arg Leu Leu Gln Glu Leu Asn Ala Thr Gln
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Phe Asn Ile Thr Asp Glu Ile Met Ser Gln Phe Pro Ser Ser Lys Val
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gct tca gga gag cag aag gag gac cag tct gaa gat aag aaa aga ccc      437
Ala Ser Gly Glu Gln Lys Glu Asp Gln Ser Glu Asp Lys Lys Arg Pro
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agc ctc cct tcc agc ccg tct cct ggc ctc cca aag gct tct gcc acc      485
Ser Leu Pro Ser Ser Pro Ser Pro Gly Leu Pro Lys Ala Ser Ala Thr
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Ser Ala Thr Leu Glu Leu Asp Arg Leu Met Ala Ser Leu Ser Asp Phe
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cgc gtt caa aac cat ctt cca gcc tct ggg cca act cag cca ccg gtg      581
Arg Val Gln Asn His Leu Pro Ala Ser Gly Pro Thr Gln Pro Pro Val
   170                               175                               180

gtg agc tcc aca aat gag ggc tcc cca tcc cca cca gag ccg act ggc      629
Val Ser Ser Thr Asn Glu Gly Ser Pro Ser Pro Pro Glu Pro Thr Gly
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Lys Gly Ser Leu Asp Thr Met Leu Gly Leu Leu Gln Ser Asp Leu Ser
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Pro Glu His Phe Val Cys Gly Gly Cys Ser Thr Ala Leu Gly Gly Ser	
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Cys Val Ser Cys Gly Glu Pro Phe Gly Asp Glu Gly Phe His Glu Arg	
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Glu Gly Arg Pro Tyr Cys Arg Arg Asp Phe Leu Gln Leu Phe Ala Pro	
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Arg Cys Gln Gly Cys Gln Gly Pro Ile Leu Asp Asn Tyr Ile Ser Ala	
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Leu Ser Ala Leu Trp His Pro Asp Cys Phe Val Cys Arg Glu Cys Phe	
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Ala Pro Phe Ser Gly Gly Ser Phe Phe Glu His Glu Gly Arg Pro Leu	
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Cys Glu Asn His Phe His Ala Arg Arg Gly Ser Leu Cys Ala Thr Cys	
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Gly Leu Pro Val Thr Gly Arg Cys Val Ser Ala Leu Gly Arg Arg Phe	
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His Pro Asp His Phe Thr Cys Thr Phe Cys Leu Arg Pro Leu Thr Lys	
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Gly Ser Phe Gln Glu Arg Ala Gly Lys Pro Tyr Cys Gln Pro Cys Phe	
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Leu Lys Leu Phe Gly *	
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 Met Glu Met Pro Arg Lys Pro Arg Leu Thr Leu Phe Val Gln
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 Arg Arg Ile Glu Asn Ile Ala Thr Glu Arg Glu Phe Asp Pro Glu Glu
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 Phe Tyr Tyr Leu Leu Glu Ala Ala Glu Gly His Ala Lys Glu Gly Gln
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 Gly Ile Lys Thr Asp Ile Pro Arg Tyr Ile Ile Ser Gln Leu Gly Leu
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Phe Glu Thr Arg Arg His Leu Cys Met Val Met Glu Tyr Val Glu Gly	
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Gly Asp Cys Ala Thr Leu Met Lys Asn Met Gly Pro Leu Pro Val Asp	
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Met Ala Arg Met Tyr Phe Ala Glu Thr Val Leu Ala Leu Glu Tyr Leu	
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His Asn Tyr Gly Ile Val His Arg Asp Leu Lys Pro Asp Asn Leu Leu	
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Val Thr Ser Met Gly His Ile Lys Leu Thr Asp Phe Gly Leu Ser Lys	
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Leu Gly Thr Gly Gly Ala Tyr Glu Val Lys Gln His Arg Phe Phe Arg	
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Lys	Tyr	His	His	Met	Glu	Thr	Glu	Glu	Glu	Asp	Asp	Thr	Asn	Asp	Glu		
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Ala	Leu	Pro	Pro	Glu	Glu	Cys	Ala	Gln	Glu	Glu	Pro	Glu	Val	Thr	Thr		
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Lys	Ser	Leu	Ser	Ala	Ser	Ala	Leu	Ser	Leu	Met	Ile	Pro	Gly	Asp	Met		
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Leu	Leu	His	Thr	Ser	Arg	Ser	Phe	Ser	Cys	Leu	Asn	Arg	Ser	Leu	Ser		
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